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ABSTRACT

This volume compiles methods known to be effective in helping industrial technology teachers work with mainstreamed handicapped students. It emphasizes an industrial technology/special education team approach, but also includes strategies that do not require this cooperation. The volume begins with a description of the special needs of several types of disabled learners, and goes on to discuss: the teacher's responsibilities in mainstreaming; guidelines for effective time management in the classroom; student placement alternatives for industrial education; assessment of students' readiness for industrial education; development of individualized education programs; management of the mainstream classroom environment; modification of the learning environment, materials, and teaching techniques; the use of microcomputers in computer-assisted instruction; peer tutoring; grading; and safety and accessibility. Examples of curriculum modules designed for special needs learners are provided on the topics of the automotive battery, production technology, and manufacturing. Samples of worksheets and timelines and references to relevant journal articles are also included, and numerous diagrams and illustrations are provided. (JDD)

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Strategies for Teaching Handicapped Students in Industrial Technology

The placement of any disabled student in a classroom can mean unique problems for the teacher and students. Foresight and planning can help alleviate these problems.

Iowa Department of Education
Des Moines, Iowa

University of Northern Iowa
Cedar Falls, Iowa
1987

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This manual was developed to help professionals serve disabled students in industrial technology programs. It is the result of five years of staff development and much idea sharing by special education and industrial arts instructors. It represents the collective thoughts of educators from school districts of various sizes from all over Iowa, universities and colleges, and the Department of Education. It is intended as a guide for those preparing to teach or first encountering the request for educating disabled students.

Readers are encouraged to copy, modify or add to this manual as needed. Additional copies are available from:

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Introduction

Information overload is a common problem for teachers today. Since the amount of information doubles about every five years, it is increasingly difficult to stay current on a topic. In addition to keeping abreast of new developments, you must also be skilled at sorting information, since much of the information on a topic is either repetitious, inaccurate or unrelated to a specific situation.

Information on industrial technology is a good example of this problem. Technology educators must find information that best interprets advancing technology for students, and relate it to career and consumer information. They must develop lab activities that allow students to apply technology. This is a tremendous task, usually made more difficult by limited supplies and equipment.

Another problem is interpreting technology for a variety of student needs. Since the inception of Public Law 94-142 (Education for All Handicapped Children Act) in 1975, most technology teachers have had handicapped students in their classrooms. Information on helping handicapped students is accumulating as rapidly as industrial technology subject matter, and it is often difficult for teachers to find time to locate the information they need for the best possible programming for handicapped students. This book attempts to provide that information.

Special Concerns

A survey of industrial arts teachers in Iowa (Callahan and Johnson, 1983) indicated that they were receptive to teaching handicapped students. However, there were several major areas of concern. These included too little time, safety, appropriate materials and methods, extra assistance needed, and student skill deficits.

It is encouraging that most technology teachers are receptive to integrating special students. It seems, however, that they are not always confident in their abilities to deal with these students' additional needs with limited resources and time.

Beliefs that Helped Shape this Book

This book compiles methods known to be effective in helping technology teachers work with handicapped students. Many of these methods were chosen based on some beliefs about industrial technology teachers and instructors.

First, the most important characteristics a teacher needs to help handicapped students require no additional study. These characteristics include subject area skills, teacher training, creative ideas and a positive attitude. Since technology teachers work with a variety of unique student needs each day, they already have some basic skills and knowledge for working with handicapped students.

A second belief that helped shape this book is that it should include techniques that help handicapped students and have the potential to positively affect other students. For example, an improved safety program has benefits for all students. This approach simply makes good sense based on the demands on teachers' time.

A third belief is that the techniques should ultimately help save the teacher time. For example, using outside resources such as the special education teacher may initially require extra time. However, when this cooperative relationship becomes routine, both instructors can save time.

Organization and Use

This book is organized to help you understand topics important in successfully integrating handicapped students. The industrial technology/special education team approach is emphasized throughout the book. However, it also includes other strategies that do not require this cooperation.

Where possible, we've included samples of worksheets, timelines, pertinent journal articles, references or instruction packets developed and used in the field. We hope the three-ring binder format will allow you to add or delete materials as necessary. Use it as a starting point for your own customized handbook for working with handicapped students.

Do not try to memorize all the information in this book. Review the information briefly and decide which sections you can use immediately. Explore and try to apply only one or two topics. This approach will naturally lead you into other sections of the book.

Chapter 1

The Disabled Learner

> There is something that is much more scarce,...something rarer than ability. It is the ability to recognize ability.
>
> *Elbert Green Hubbard*

Chapter I

The Disabled Learner

Standards in Industrial Arts

Special Needs

In 1978, the Standards for Industrial Arts Programs Project at Virginia Polytechnic Institute and State University was funded to develop standards for industrial arts. The project was a response to the recommendations by the American Industrial Arts Association (AIAA) and the Industrial Arts Division of the American Vocational Association (IAD/AVA). It was funded by the former United States Office of Education (USOE).

From December 1979 through November 1981, the project worked to develop a set of standards for industrial arts programs. The standards were developed and validated during regional workshops attended by over 400 industrial arts teachers, state and local supervisors, consultants and teacher educators. The standards are comparative statements used to determine the strengths and weaknesses of industrial arts programs. They can also serve as models for schools, districts and states that wish to develop, adopt or refine standards for improving their industrial arts programs.

The project produced four major documents: *Standards for Industrial Arts Programs, AIASA Guide for Industrial Arts Programs, Sex Equity Guide for Industrial Arts Programs,* and *Special Needs Guide for Industrial Arts Programs*. The three guides should be used with the standards. The guides suggest program improvements related to student organizations, sex equity and students with special needs. Together, the standards and the three guides can help improve industrial arts programs. They contain the best thinking of the industrial arts profession on what industrial arts programs should be and how they can be improved.

These standards contain 235 statements that assess the quality of an industrial arts program. The statements cover 10 topics: philosophy, instructional program, student populations served, instructional staff, administration and supervision, support systems, instructional strategies, public relations, safety and health, and evaluation.

The *Special Needs Guide for Industrial Arts Programs* is a response to a growing recognition that students with special needs should be welcome in any classroom. This guide explains some of the terminology and definitions associated with special needs students and offers strategies for accommodating these students in industrial arts programs. Many of the special needs students, whether disadvantaged, gifted and talented or handicapped, can succeed in industrial arts programs and be contributing members of society.

For information on obtaining the standards, contact Dr. William E. Dugger, Jr., director, Standards for Industrial Arts Programs Project, 368 Smyth Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24601, (703)961-6480.

Standards: Special Needs

Among the 235 standards set in *Standards for Industrial Arts Programs*, 19 directly address students with special needs. These are covered here.

1. *Philosophy*: The philosophy identifies the needs, abilities and interests of all learners regardless of race, sex, creed, national origin or handicapping conditions.

2. *Instructional Program*: Course objectives are used as a basis for developing the industrial arts component of the individualized education program (IEP).

3. *Student Populations Served*: Students who are academically or economically disadvantaged are provided special services and assistance, as required, to enable them to succeed in the industrial arts program.

4. Students who have physical, mental or emotional impairments are provided special services and assistance, as required, to enable them to succeed in the industrial arts program.

5. Students identified as handicapped and requiring additional or modified educational services or materials are enrolled only after the individualized education program (IEP) has been prepared.

6. Students identified as gifted and/or talented are provided learning activities consistent with their abilities.

7. Industrial arts is provided for students, regardless of their cultural differences.

8. *Instructional Staff*: The industrial arts teacher is prepared, through preservice/inservice education, to provide experiences for students with special needs.

9. *Administration and Supervision*: Teacher aides or paraprofessionals are provided in classes where enrollment of students with special needs necessitates their assistance.

10. Demographic data about all industrial arts students are available by grade level and by course, including but not limited to course enrollments by racial and ethnic categories, by sex and by type and number of students with special needs.

11. *Support Systems*: Personnel are available to help the industrial arts teachers serve students with special needs.

12. Accessibility for the handicapped is ensured through the elimination of architectural barriers.

13. Specially designed or modified tools, machines and equipment are provided for students with special needs.

14. Books and other instructional materials are provided to meet the unique requirements of students with special needs.

15. *Instructional Strategies*: Teachers provide input to the individualized education program (IEP) committee for handicapped students enrolled in industrial arts programs.

16. Instructional strategies appropriate for serving students with special needs have been identified and incorporated in industrial arts programs.

17. Each identified handicapped student enrolled in industrial arts is evaluated annually through procedures and criteria described in the individualized education program (IEP).

18. Special safety and health accommodations are provided for students with special needs.

19. Specially adapted personal protection devices are available for and used by students with special needs.

Major Handicapping Conditions

Industrial arts (technology) teachers will encounter labels commonly used in special education to identify and communicate about students. These labels can be confusing. This section includes a brief explanation of common disabilities encountered by industrial technology teachers. It is intended to help the industrial technology teacher understand what labels mean and what a student's behavior in the classroom may be indicating.

Defining "Handicapped"

Until the beginning of the 20th century, little attempt was made to accommodate students with special needs. Recently, programs have been developed to provide the appropriate teaching methods, materials and classrooms to help handicapped students develop their fullest potential in a setting that is most like the "regular" classroom.

Handicapped students are very similar to other students. They differ because they require unique services, instructional materials, teaching methods or facilities because of their special needs.

Being handicapped does not always imply a physical handicap, however. When asked the question, "Who are the handicapped? " one group answered, "Students in wheelchairs."

Handicapped is an all-inclusive term which may refer to students who are mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired or deaf-blind. It also refers to students with multiple handicaps, other health impairments or specific learning disabilities. Because of these impairments, these students need special education and related services.

A student may be handicapped in one or several of these areas. The severity and number of the student's disabilities dictates the amount of time he or she will require special help and the extent that materials and curriculum must be modified.

The federal rules and regulations of Public Law 94-142 contain the specific definitions for each disability. Each state's law for the handicapped also contains definitions pertinent to that state.

Public Law 94-142
Section 121a.5 Handicapped Children

a. As used in this part, the term "handicapped children" means those children evaluated in accordance with SS121A.530-121A.534 as being deaf, deaf-blind, hard of hearing, mentally retarded, multihandicapped, orthopedically impaired, other health impaired, seriously emotionally disturbed, specific learning disabilities, speech impaired, or visually handicapped, who because of those impairments need special education and related services.

b. The terms used in this definition are defined as follows:

1. "Deaf" means a hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing with or without amplification, which adversely affects educational performance.
2. "Deaf-blind" means concomitant hearing and visual impairments, the combination of which causes such severe communication and other

developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind children.

3. "Hard of hearing" means a hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance but which is not included under the definition of "deaf" in this section.
4. "Mentally retarded" (in Iowa this is referred to as mental disability) means significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects a child's educational performance.
5. "Multihandicapped" means concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically impaired, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind children.
6. "Orthopedically impaired" means a severe orthopedic impairment which adversely affects a child's educational performance. The term includes impairments caused by congenital anomaly (e.g., clubfoot, absence of some member, etc.), and impairments from other causes (e.g., cerebral palsy, amputation, and fractures or burns which cause contractures).
7. "Other health impaired" means limited strength, vitality or alertness, due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, asthma, sickle cell anemia, epilepsy, lead poisoning, leukemia or diabetes which adversely affect a child's educational performance.
8. "Seriously emotionally disturbed" (in Iowa this is referred to as behaviorally disordered) is defined as follows:

(i) The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

a. An inability to learn which cannot be explained by intellectual, sensory, or health factors;
b. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
c. Inappropriate types of behavior or feelings under normal circumstances;
d. A general pervasive mood of unhappiness or depression;
e. A tendency to develop physical symptoms or fears associated with personal or school problems.

(ii) The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

9. "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, or mental retardation, or of environmental, cultural or economic disadvantage.
10. "Speech impaired" means a communication disorder, such as stuttering, impaired articulation, a language impairment or a voice impairment, which adversely affects a child's educational performance.
11. "Visually handicapped" means a visual impairment which, even with correction, adversely affects a child's educational performance. The term includes both partially seeing and blind children. (20 USC 140 [1]. [15]).

Mental Disabilities

A mentally disabled student has below average intellectual ability. On both verbal and nonverbal intelligence tests, the student performs poorly. On adaptive behavior scales which determine how well a student gets along in "everyday" life, the student also performs poorly. These scales measure the student's ability to carry out responsibilities in daily living such as going to the grocery store, making change or playing with other students in the neighborhood without getting lost.

A student who is labeled mentally disabled should be able to learn a lot of things the "normal" student does; it will usually take longer and involve more practice.

Academically, the student performs below average in reading, math, spelling and other subjects. The student does not learn just from one experience. Much drill and repetition is necessary for the student to learn. For example, when a student labeled mentally disabled tries to learn multiplication facts, he or she may eventually know the facts, but it will be after repeated practice with flashcards, tapes, timed tests, games, etc.

The student has more difficulty with activities which require reading and listening, following complicated directions and solving problems. An example is that it is very helpful for the mentally disabled student to have real objects when learning new words, since the student can easily identify with them. Also, simple directions involving few steps are easier, and the child is more likely to carry them out.

The student needs more review than other students. The mentally disabled student has a tendency to perform better if someone, like a teacher, monitors the student's work. Rather than waiting until an assignment is completed, the teacher should check periodically while the student is working and be sure the student is completing the assignment correctly.

The student needs to work in a classroom free of distractions and interruptions. The student works best where he or she won't be distracted by others talking loudly or where there is not a great deal of activity which can interest him or her visually. The student concentrates best in a room where there are fewer posters, bulletin boards, materials and other students moving about. Because of the difficulty in these areas, a mentally disabled student has trouble with school work and dealing with day-to-day situations.

There are certain jobs, daily tasks and social situations which the student can handle well. A student might function below average in school, but still hold a job and be self-supporting. An example would be a student who has below average skills in reading but is able to work at a car wash or grocery store.

Behaviorally, the mentally disabled student has problems understanding how to respond in certain social situations. This may result in the student behaving inappropriately. A student might be taught five questions to ask a person when starting a conversation, but the student may not realize that he or she does not continue to ask these five questions again and again of the same person. The student needs to be taught this behavior. Think of what it would be like to be in a strange country where you are not familiar with the customs. You could easily make the same mistake in a Middle Eastern country by complimenting a woman on her attractive hair. This would be highly improper and offensive because of her culture. In other words, a mentally disabled student has difficulty knowing what to do in social situations unless he or she is taught how to act.

The mentally disabled student may have a poor self concept. This results from the student's inability to do things he or she sees "normal" students doing and from making mistakes and feeling inadequate in social situations.

The mentally disabled student has difficulty adapting to new experiences and solving problems. Often these students have a short attention span; they are not able to concentrate on any task for long. Their physical development often proceeds at a slower rate; therefore, physical development may continue for a longer time.

Behavior Disordered/Emotional Disabilities

For students with behavior disorders or emotional disabilities, intellectual ability is not a strong indicator that a problem exists. Behavior disordered/emotionally disabled students may vary in intellectual ability from low to high.

The behavior disordered/emotionally disabled student is one who is not performing at his or her academic ability level. Teachers describe these students as having the ability to do the work, but being so preoccupied with other things that he or she does not complete it. The student has a short attention span and consequently has difficulty listening to the teacher's directions or instructions.

The student's moods range from very depressed or withdrawn to very excited, happy and cooperative. This student may often complain of feeling uneasy or anxious for no particular reason. The student has problems getting along with friends and teachers and adults. The student may frequently be in trouble at school for fighting on the playground, or at home because he or she cannot play quietly with other children. Sometimes the behavior disordered/emotionally disabled student is impulsive and overactive. One can see no reason why suddenly the student turns a somersault in the classroom!

Physically, the student may complain of pain or discomfort which has no physical basis. The student may exhibit a behavior repeatedly, such as nail biting, rocking, scratching, poking or scribbling.

Visually Impaired

When these students take an intelligence test designed for the visually handicapped, they have about the same results as a sighted person would on a regular intelligence test. Academically, the visually handicapped function relatively normally or may function about one year below grade/age level.

Few changes need to be made in the school curriculum, but special materials may need to be obtained or developed. An example would be replacing regular reading books with some written in larger print or Braille.

The most noticeable behavioral characteristics exhibited by visually impaired students is a poor self-concept. Physically, on the other hand, the student may have difficulty in running and athletics in general because of the visual impairment. But students should not be excluded from physical education because of the handicap.

Communication Disabilities

For students with communication disabilities, the range of intellectual functioning is the same as a non-handicapped student. This student may use "baby talk" or not be able to make some sounds. He or she may not be able to form plurals or past tenses of words. The student may also have a more limited vocabulary.

Academically, the speech impairments affect the student's ability to participate in class discussions, respond to oral questions or give oral book reports. The student may perform below average in reading and language arts because oral language fluency is so related to reading and writing. Often this student has difficulty understanding what you say to him or her.

In appearance, there is no difference unless the student has a deformity, such as a cleft palate. The student's physical abilities may be a strength; speech/language does not affect their performance.

Deaf and Hearing Impaired

If an intelligence test designed for the hearing impaired is given, the range will be the same as that of a normal student. How well the student performs academically depends on the age at which the hearing impairment occurred and the degree and nature of the loss. For example, is it in the range of the normal speaking voice or only at the upper and lower ranges?

Problems may occur in reading, spelling and other oral language-related areas. The student learns best when instruction is presented visually, using concrete or "real" materials.

Frequently a hearing impaired student responds to questions by smiling, nodding or saying "yes," even in situations where the student does not understand what is being said. Errors in speaking may occur where the student drops the "s" from the endings of words. The student may say "the boy hat" for the boy's hat. Often the student speaks too loudly.

The student with a hearing impairment may appear not to be listening or understanding the teacher's directions. In this situation, remind the student to look at you when oral instructions are given.

Often this student is annoyed by the inconvenience of a hearing aid. Sometimes, it may be set for sounds at the noise level of recess when students are louder and noisier. Then the student must adjust the setting for the classroom where it is quieter.

One special physical consideration is that the student may have a history of frequent earaches, ear discharge, or clogged nasal passages, resulting in mouth breathing.

Learning Disabilities

Students with learning disabilities show a difference between their ability and how they perform in the classroom. The student's intelligence is normal or above normal but performance is two or three years below grade level. An example is a student with average ability in the fifth grade, but a second grade reading level.

The problem is caused by a disturbance in some basic thinking process. It is not caused by mental retardation, blindness, environmental deprivation, etc. The student's hearing and vision may be normal, but the child is perceiving things differently. The student may easily mistake "b" for "d" and read the word "won" as "now."

The student with a learning disability does not perform to his or her ability in all academic areas. These students often show a pattern of strengths and weaknesses. They may do well in some academic subjects but not in others. Frequently, a student may perform at grade level in math but encounter great difficulty in handwriting, reading or spelling. This is quite different from mentally handicapped students whose performance is below average in all subjects.

Inconsistent performance is another characteristic. One day the student may recognize a word and know the multiplication facts for threes; the next day, he or she does not.

The student with a learning disability has difficulty understanding and following directions. This certainly affects his or her ability to complete classroom assignments. This student also has difficulty with time concepts. We are accustomed to a particular routine and can easily estimate the time of day and will know the day of the week. These concepts may be very confusing for a student with a learning disability. This student must concentrate on learning the basic skills or learning to compensate for the lack of those skills.

Students with learning disabilities are often hyperactive. At the elementary level, the student may be in constant motion, moving in and out of the chair, kicking legs and feet, walking to and from the pencil sharpener, moving from one activity to another. As the student grows older, this hyperactivity seems to decrease. The movement may change to more subtle things, such as finger tapping, object tapping or blinking.

The student with a learning disability usually has a short attention span. He or she is unable to concentrate on anything for long, so it is difficult for the student to cope with long class periods and lectures. He or she will be easily distracted by noise, and find it hard to concentrate on homework in study halls or at home. The student has trouble with unsupervised and unstructured time.

It is very helpful for a teacher to do the same things consistently with the student, to list the task to be completed, and to check with the child frequently to be certain he or she is on target. These steps are reassuring to the child.

The student with a learning disability may be easily upset, nervous and may rapidly change from one mood to another. Organization is a real problem. Desks may be messy; setting up a paper is a real feat; keeping a notebook neat is a chore. Just getting ready for school may be a major accomplishment!

The student may have negative or poor feelings about himself/herself and may not feel motivated to complete work.

General coordination for a learning disabled student may be poor. An awkwardness is evident in skipping, climbing or running. Fine motor skills, such as writing, typing, mechanical drawing, shop, etc., are affected.

Conclusion

A number of handicapping conditions have been described. Actually a handicap is the result of any disability a student may have. Whether a student with a disability grows up to be handicapped depends on how the student's family, neighbors and teachers regard and treat him or her. Many disabled people function normally and are not regarded as handicapped.

We need to remember that no matter what disability(ies) the student has, he or she must be taught and encouraged to become as self-sufficient and independent as possible.

An important note: These characteristics are just several that may describe a condition. Also, not all handicapped children demonstrate all characteristics.

Chapter 2

The Teacher

> Success often comes to those who dare act; it seldom goes to the timid who are ever afraid of the consequences.
>
> *Jawaharlal Nehru*

Chapter 2

The Teacher

A Team Approach

A variety of techniques have been espoused over the last 10 years to assist the mildly handicapped learner in the "regular" industrial arts classroom. Peer tutors, listening guides, carbon paper notes and taped texts are frequently suggested. Regardless of the technique, the goal has been the same: to adapt the industrial arts classroom so that students with learning problems are more capable of gathering the information presented there or from out-of-class assignments. This is a significant task when added to your present instructional responsibilities.

An industrial arts teacher with both "normal" and "mildly handicapped" students has many responsibilities. These responsibilities include:

1. Maintaining the validity of the industrial arts content.
2. Keeping abreast of changes in content.
3. Delivering the content using instructional techniques appropriate to all students.
4. Maintaining a high level of awareness about new instructional strategies and techniques.
5. Participating in the varied responsibilities of the school community.

These responsibilities become more problematic with the introduction of handicapped learners in the industrial arts classroom.

Industrial arts teachers are introduced to instructional techniques appropriate for handicapped learners in a variety of ways. These include journal articles, conference presentations, conversations with other industrial arts teachers, college classes or workshops and in some cases interaction with the special education teacher. Special education teachers are expected to provide the industrial arts teacher with a wealth of instructional techniques and industrial arts materials that are appropriate for a particular handicapped learner.

Unfortunately, the same special education teacher is also expected to be a resource for social studies teachers, English teachers, math teachers, history teachers, etc. As a result, the special education teacher must rely heavily on the subject area teacher for content organization and knowledge base. Both the industrial arts and the special education teacher must also rely on the building administrator to support the integration of handicapped students in the industrial arts class.

Successfully integrating handicapped children in the "regular" classroom requires a team approach. The tools in this document are designed to facilitate the efforts of the team members. However, the different responsibilities need to be agreed on in advance and implemented successfully if the mildly handicapped student is to benefit from regular classroom instruction. The following table illustrates one suggestion for assigning responsibility for classroom-related activities to facilitate the integration of handicapped students.

Integration Responsibilities

Administrator

1. IEP development
2. Accessibility considerations
3. Safety considerations
4. Budgetary implications
5. Time management procedures

Industrial Arts Teacher

1. IEP development
2. Safety considerations
3. Content selection and analysis
4. Methods, materials and procedures selection
5. Student evaluation

Special Education Teacher

1. IEP development
2. Accessibility considerations
3. Content analysis
4. Materials, methods and instructional strategies selection
5. Consultation on evaluations procedures
6. Direct instruction in prerequisite concepts

Keep in mind that this is only one suggestion. A modification of this can accommodate local considerations and concerns. Note that the responsibilities of the industrial arts teacher do not focus on new and different activities, but simply on activities that may be done in a slightly different way to accommodate for the needs of a handicapped learner. These changes are to be facilitated by the administrator and supported by the special education teacher. This team approach will help us avoid the undesirable side effects of using a classroom as a "dumping ground." We can promote a positive program image where all America's children can receive a free, appropriate public education.

Time Management

Serving students who have special needs requires a time commitment, sometimes beyond the time you allot for each student. The time commitment can be irritating and upsetting unless you establish a system to manage your time as efficiently as possible to accommodate the demands of serving students' special needs.

Some time commitments you may run into in serving students include: individualized education program (IEP) planning, meetings with special education teachers and parents, revising printed materials, grading, individualized instruction, additional instruction and laboratory time, and increased professional reading. To meet these added demands, you may need to manage your time more wisely.

Time management is no easy task. At minimum you could identify time traps and time wasters, how well you manage time, and establish a daily time log and a weekly plan.

Review the "Time Wasters" in this chapter and identify your three biggest time wasters. Establish a plan to eliminate the time wasters. Then consider using some of your saved time to serve the special needs of students.

Whether you like it or not you now manage your own time. You may be doing very well or not so well.

Use the "How Well Do You Manage Time?" instrument to rate yourself. Use the hints to help you become a better time manager so some of your time can be used to help a special needs student. A little of your time could make the difference in a student's success or failure.

Keeping a log of how much time you spend on various tasks each day will give you a complete record of what you do. Knowing how much time you spend doing certain tasks will enable you to make adjustments. But you need a record before you can adjust. Use the daily time log included as a model.

Basic Principles to Follow

1. You must want to manage your time efficiently in order to change. You may be okay and not need to change.
2. Analysis is important to get a picture of what you do.
3. Efficiency and effectiveness must come together so time management has to be tempered accordingly.
4. Teamwork counts.
    a. Each person's responsibility needs to be defined.
    b. Team members all need to be aware of time management.
    c. Reward those who respect your time.
    d. Keep track of how much and to whom you delegate.
    e. Don't be a perfectionist. Let other folks do their thing.
5. Protect other people's time.
6. Set timelines for meetings and discussions.
7. Be open to others about your desire to manage time.
8. Help others save time.

Time Wasters

1. Lack of objectives, priorities and daily plans.
2. Attempting too much at once.
3. Lack of self-discipline.
4. Leaving tasks unfinished.
5. Inability to say "no."
6. Confused responsibility and authority.
7. Indecision and procrastination.
8. Inability to say "no."
9. Lack of clear communication.
10. Cluttered desk.
11. Personal disorganization.
12. Inability to say "no."
13. Too many meetings.
14. Disruptive behavior in the work place.
15. Poor teacher attendance.
16. Inability to say "no."
17. Teachers not understanding assignments/jobs.
18. Poor health habits, little exercise and lack of rest.
19. Trying to be perfect.
20. Inability to say "no."
21. Inability to delegate.
22. Being a workaholic.
23. Not using support personnel properly.
24. Uncertain about direction and purpose.
25. Inability to say "no."

How Well Do You Manage Time?

by J. Boyd Scebra

Circle 1 if you've never used the technique in question. Circle 2 if you seldom have used it. Circle 3 if you sometimes use it. Circle 4 if you often use it. Circle 5 if you always use it. Add the numbers for the 10 questions, and see how good a time manager you've been. Read the explanations for hints on how to organize your time better.

In the times past, I have (never, seldom, sometimes, often, always:)

1. ......kept a log of how much time I spent on various tasks each day 1 2 3 4 5
2. ......kept a writing pad handy to jot down random ideas so I wouldn't forget them 1 2 3 4 5
3. ......made a list each night of things I had to do the following day and then ranked the tasks according to priority 1 2 3 4 5
4. ......demanded that everyone who had to see me have an appointment 1 2 3 4 5
5. ......set aside a specific time each day for returning telephone calls 1 2 3 4 5
6. ......set aside a specific time each day when I could be absolutely alone to plan, ponder or do whatever needed to be done 1 2 3 4 5
7. ......delegated important tasks to capable others 1 2 3 4 5
8. ......kept to a minimum the number of meetings I scheduled 1 2 3 4 5
9. ......developed a filing system I could use myself 1 2 3 4 5
10. ......set deadlines for my own work and for co-workers when appropriate 1 2 3 4 5

Scoring

What your score means: If you scored between 40 and 50 points on the quiz, you probably run a pretty tight shop. Your daily schedule is never rendered meaningless by the time your morning coffee break rolls around, and others are able to work efficiently because they're confident you'll keep things running smoothly. If you scored between 20 and 40 points, there's room for improvement, and you're probably glad you took this test. Find out where you scored poorly, and make a commitment to improving in that area. If you scored between 10 and 20 points, I'd hate to work for you. Your desk is probably a mess, and your car probably needs a tune-up. Come on, get it together.

Here's why scoring high is important:

Question 1: Keeping a log of how much time you spend on various tasks each day will give you a complete record of what you do. Knowing how much time you spend on the telephone, in conference with visitors, in meetings, and so forth will enable you to make adjustments. But you need a record before you can adjust.

Question 2: Keep one legal pad in an attractive hardback folder on your desk, and another in your car, and carry one in your briefcase when you are traveling or attending meetings. Jot down any ideas that come to mind, things you must do, things you want to delegate to someone else, or simple reminders of any kind. Remember: If it is on the paper, it is off the mind. Each item should be dated and numbered. As you take care of each one, cross it off your list. Retain those pads for future reference.

Question 3: Making a list of your priorities before you retire each night will enable you to start fresh with the highest priority item the next day.

Question 4: Everyone who needs to see you should have an appointment unless there is a true emergency. Drop-in visitors can waste your time and destroy your concentration. The door to your office ought to control unannounced and unscheduled visitors. Also, do not permit the persistent drop-in visitor to drop in and request an appointment within the next few minutes. Schedule your appointments well in advance, if possible. Inform unscheduled visitors that appointments are necessary.

Question 5: Continuous interruptions by telephone calls are just as frustrating as drop-in visitors. Your school secretary must have good judgment about which telephone calls you can receive and when. If you've set aside a specific time for receiving and making calls, the secretary can state that you are not available, take the number, and have you return the call. Also, your secretary should keep a current listing of frequently used telephone numbers.

Question 6: Stop everything. Shut the door and think. Just think. And no interruptions.

Question 7: Face it: You've got a lot of work. Your trusted and capable co-workers might do a better job than you on some project, so discuss and share some of the important tasks, don't try to be a one-man show. Learn to say, "No, I'm not going to do this task." But have someone in mind who will.

Question 8: Challenge the necessity of routine meetings. Would a memorandum to all concerned be more appropriate? Make sure to invite to meetings only those people whose presence is vital to the meeting's mission. Of course, keep a record of all memorandums, minutes of meetings, and so forth for future reference.

Question 9: Use whatever filing system works best for you. But don't rely entirely on your secretary to fetch something from your files. You can save a lot of time by knowing the system yourself.

Question 10: Setting deadlines helps you manage your own time by managing the time of others. Setting deadlines — and sticking to them — is the ultimate time saver.

A = Must Do

B = Should Do

C = Could Do

Daily To-Do List

Date: __________________________________

Activity	Priority A	 B	 C
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Weekly Plan

	Monday	Tuesday	Wednesday	Thursday	Friday
A.M.					
P.M.					

Chapter 3

Mainstreaming

> There is another and perhaps greater danger involved in this matter of accepting the limitations of others. Sometimes we are apt to regard as limitations qualities that are actually the other person's strength. We may resent them because they are not the particular qualities which we may want the other person to have. The danger lies in the possibilities that we will not accept the person as he is but try to make him over according to our own ideas.
>
> *Eleanor Roosevelt*
> *You Learn By Living*

Chapter 3

Mainstreaming

Mainstreaming

The term "mainstreaming" is used often by teachers and administrators. Generally, it relates to placing disabled students in education classes along with non-disabled students. Special education support services are made available to help the disabled students succeed in the classes.

Although mainstreaming is strongly supported as a way to educate disabled students, it is not the only way and is not always the best way. Industrial education teachers in Iowa support two primary ways to educate disabled students: mainstreaming and separate classes for the disabled only. In addition, instructors extend classes for disabled students to allow them enough time to complete projects.

Before students are placed in industrial education classes, consideration should be given to:

1. Deciding whether the student should be mainstreamed or served in a special industrial education class.
2. Identifying what support will be provided by special education teachers and other special education staff.
3. Deciding on clear and measurable objectives of the industrial education class.
4. Identifying the learning problems of the student and appropriate teaching strategies that accommodate the learning problem.
5. Clarifying expectations on grading the disabled student's work.
6. Establishing procedures for emergencies and preparing the industrial education teacher to handle questions about disabilities and seizures.

Ten Questions

At minimum, industrial education teachers should be asking 10 questions about how students learn. They are:

Can Students:

1. read and understand the material used in the industrial education class?
2. do the math computation necessary for success in the industrial education class?
3. follow a series of commands without forgetting?
4. communicate without difficulty or timidity?
5. receive criticism without adjustment problems?
6. transfer thoughts (concepts) to applied situations? Are aids needed?

Are students:

7. motivated by competition with others? If not, how are they motivated?
8. interested in the subject matter?

How does the student:

9. learn best: auditorily, visually, doing (identify the strongest mode of learning between visual and auditory)?
10. learn new concepts: fast, slow? (Identify if speed needs to be worked on.) Is added time necessary?

Each question seeks information that will be useful in modifying instruction and altering the environment to accommodate learners. The questions can be used in guiding joint conferences between the industrial education teacher and special education staff.

Industrial Education Placement Alternatives for the Handicapped*

Regular Industrial Education. Regular industrial education or general high school programs may be determined as appropriate for all handicapped students who can benefit from such placement.

Adapted Industrial Education. Regular programs are altered to accommodate eligible special education students who could not otherwise be placed in the program. Special materials and instructional aids are examples of adapting the program. This alternative may be needed for handicapped persons having problems in the regular program.

Special Industrial Education. This program is usually limited to handicapped students assigned to self-contained special education programs. It is designed for handicapped persons whose disability precludes integration in a regular or adapted industrial education program.

Special Vocational Training Programs. Training is provided in special programs (such as CETA, apprenticeship training approved by a governmental agency), or a unique individual training program designed to fit a handicapped student's special interests and not generally available in the geographic area (outboard motor repair, tailoring, inhalation therapy). This program may be used for a variety of

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*Adapted from: "Vocational Alternatives Available for the Handicapped in Michigan," *Vocational Education for the Handicapped: A Review*, ERIC Clearinghouse on Career Education, Columbus, Ohio, 1977.

special training needs. Community training stations may be used as long as students do not become employees and are not paid. Training of this type usually occurs in rehabilitation workshops.

Sheltered Workshops. Facility designed to provide a supervised paid work environment that emphasizes developing skills needed to maintain the current level of functioning or improving independent functioning.

Work Activity Center Services. Designed exclusively to provide work therapy for impaired persons whose handicaps are so severe as to make their productive capacity limited.

Secondary Program Models for Students in Need of Special Assistance*

General Education Program with Modifications

The student remains in the regular program and receives auxiliary and support services appropriate to his or her needs. The program may be modified by the classroom teacher or by a consultant. The primary responsibility may be to adjust the curriculum by adding new materials, changing the textbook or any of the following:

Tutoring: Tutoring can provide special assistance to a student while most of his or her instruction is still in the regular classroom. Volunteers, peers, older students, teacher aides and retired teachers are often used as tutors.

Academic and Social Contracts: Behavioral contracts between student and teacher for academic or behavioral problems often substitute for resource room placement. To be effective, these contracts must be monitored by appropriate personnel, such as the social worker, psychologist or resource room teacher.

Parental Involvement: Often contact with the parent results in home reinforcement for school problems and results in successful adjustment by the student in school.

Principal Intervention: An administrative contact with parents, teachers or professionals often brings about necessary change for the student, permitting him or her to adjust to classroom problems.

Part-Time School Program: Occasionally, a student can only handle school part-time. While this should rarely be considered, it is an alternative which may be used occasionally. Another option is placing the student part-time in a lower grade level for instruction in problem subjects (i.e., one-half ninth grade English, one-half 10th grade English). Another option offered in some schools is placement in a transition room.

Alternative Credit Program: High schools usually offer alternative classes for which students can receive credit toward graduation. Examples of these are independent research, community service, work study, internship and tutoring.

Consultant Services: A qualified special education teacher provides assistance through the classroom teacher to exceptional students attending regular classes. The assistance may be in the form of suggestions to the classroom teacher about different methods or materials to use.

Resource Room Programs: Services are provided in a separate room for a short period each day to students who are placed in a regular program. Specific objectives are prescribed that outline the work the student does while in the resource room.

Integrated Programs: Students are identified with their special class and are integrated into other regular class settings whenever possible.

Work-Study Programs: These programs are for students who need or may profit from vocational training. The students spend a portion of their school day in an actual work setting, either in the school building or out of school.

Itinerant Services: Students receive services on a regular schedule from specialized staff not physically based in the same building or program as the students. These services are usually coordinated by the special education teacher. The schedule or the service varies according to student need, caseload and so forth. Services can include physical and occupational therapy, speech therapy, diagnosis and programming.

Related Support Services: Services are provided to secondary students by agencies outside of public education, such as vocational rehabilitation or mental health agencies.

Transition Room: A self-contained program helps the student move from one grade level or program to the next, such as between junior and senior high. Usually a transition room provides a lower student/teacher ratio for more intensive programming.

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*Adapted from "Placement Alternatives — Secondary Program Models," Mountain Plains Regional Resource Center, Drake University, Des Moines, Iowa 50311; and *Strategies and Techniques for Mainstreaming; A Resource Room Handbook,* Lott, Hudak and Scheetz, Monroe County Ind. School Dist., Monroe, Michigan, 1975.

Secondary Program Models for Students in Need of Prolonged Assistance

Self-Contained Class/School: A specialized instructional environment for students in need of prolonged assistance. These students require intensive instructional procedures which prevent enrollment in a regular classroom.

Day School Programs: A specialized program provided by a facility other than the public school. A student attends during the day and returns home at night.

Residential School Programs: A program designed for students in need of prolonged and continued assistance provided by a specialized facility. The student lives at the facility and receives his or her education there.

Goals and Objectives

Goals and objectives are necessary in industrial technology courses to ensure proper placement of handicapped students. When a special student is mainstreamed in the regular classroom, it is with the belief that the student can meet the objectives with minimum adaptation. If no objectives are available for the course, then it is difficult to determine proper placement, and there is a greater risk for inappropriate placement.

The special education teacher can use goals and objectives to help determine proper placement. The special education teacher should communicate with the technology teacher to learn about and understand the course activities. These goals and objectives should be used in the IEP to document expectations for the student.

Goals and objectives are not difficult to establish. The *Iowa Guide for Curriculum Improvement in Industrial Arts K-12* has a complete listing for industrial technology courses. The same list is also available on disk for the Apple II at the Suroski Center at the University of Northern Iowa.

Goals for industrial technology courses in Iowa, as stated in the *Iowa Guide for Curriculum Improvement in Industrial Arts K-12,* fall into two areas: career emphasis and industrial-technological. The entire course curriculum should be related to these broad goals.

Career Emphasis Goals

Develop an understanding and appreciation of the role of the worker in industry and society, and positive attitudes toward life and work.

Become aware of and explore talents, aptitudes, interests and individual potential related to careers in industrial fields.

Develop an understanding of career opportunities in industry, and develop traits that help students obtain and maintain employment.

Industrial-Technological Emphasis Goals

Develop an understanding and appreciation of the importance of industrialization in modern social and economic life.

Develop an understanding of the interdependence of society and industrial technology.

Develop proficiency in properly using tools, machines, techniques and processes.

Develop problem-solving and creative thinking abilities.

Develop knowledge and abilities relating to the basic elements of an industrial enterprise.

Promote the development of consumer knowledge and avocational interests.

Will Mainstreaming Ruin Your Laboratory/Shop and Burn You Out?*

by W.J. Haynie, III

Will mainstreaming ruin your shop and burn you out? The answer to this question should be a resounding "no." If the answer is yes, something is wrong and it may not be you!

This article discusses the real mandates imposed by Public Law 94-142 in the hope of alleviating the anxiety of teachers who anticipate their first actual experience with mainstreaming. The teacher's duties regarding mainstreamed students will be discussed in terms of working with PL 94-142 rather than against it or around it.

Stress and Burnout

Teacher burnout has been well documented in the leading journals of education, and McGuire (1979) has pointed out that some frustrated teachers want to leave the profession. Teachers burnout in all educational settings, regardless of grade level, subject or discipline.

So, what causes burnout? Numerous articles and studies have cited stress as a main cause. This stress can be brought about by uncertainty, abrupt role changes, and role overload or underload (Colarelli, 1978). And, stress is cumulative because the victim's resiliency and ability to cope with stress are reduced by subsequent stress-producing situations (Styles & Cavanaugh, 1977).

Fear of mainstreaming causes stress and sometimes resentment for many teachers. Bensky et al. (1980) found that "as reported compliance by the school with PL 94-142 mandates increased, reported stress from PL 94-142 tasks increased and reported stress from other tasks decreased" (p. 27). Thus, the teachers in the study not only viewed mainstreaming as stressful, they ranked it as more stress producing than other facets of their jobs, such as large class sizes, low salaries, demands from parents and violence in the schools (Stevenson & Milt, 1975).

For many teachers mainstreaming could be the last straw. As Ryor (1976) stated in a discussion of the stress produced by mainstreaming handicapped students into already crowded classes,

> There must be reductions in class size. Many teachers, overwhelmed with paperwork and other chores, are already fatigued, frustrated and on the brink of demoralization. Too often, their struggle to individualize instruction and build each child's self-image, self-respect and confidence has been submerged into mere babysitting and attempting a semblance of discipline. And then imagine their plight—yours, perhaps—when faced abruptly and for the first time with blind children, spastics, emotionally disturbed, or other handicapped who join a class that is already too large. (p. 5)

Uncertainty + Confusion = Stress

Because stress has been shown to be largely caused by uncertainty and confusion, teachers need to be shown a way to alleviate job stress. Certainly, we all fear the unknown. This is because we are anxious about what may happen to us, although we are not sure what that is. This uncertainty produces even more stress than if we know exactly what to expect.

And, unfortunately, therein lies the cause for fear about mainstreaming. We hear rumors in the teachers' lounge or on the playground and go into the situation with a good deal of negativism. But, in reality, mainstreaming should not upset your entire class. If it does, it is a result of mistakes, incompetence, negligence, or a combination.

What Do You Really Know About Mainstreaming?

There are seven main mandates of PL 94-142 listed in the Federal Register of August 23, 1977:

1. a free appropriate public education
2. individualized education program
3. least-restrictive environment
4. due process for parents and children
5. personnel development
6. confidentiality of information
7. protection in evaluation procedures.

These seven mandates have been misinterpreted by many teachers and administrators. First, let us look at the word mainstreaming. Which of the seven mandates says all handicapped students must be mainstreamed? If you name any of them you are wrong. Following is a list of what these mandates really do require.

The free appropriate public education provision means that parents of handicapped students should not be penalized with excessive, extra expense to educate their children (regardless of setting) and that free public education that meets the students' needs must be provided. This requirement affects

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*Reprinted with permission from *The Technology Teacher*, December 1983. W.J. Haynie, III is an assistant professor of education, Industrial Arts Program, George Mason University, Fairfax, Virginia.

administrators more than teachers and will not be discussed further.

The individualized education programs mandate can affect teachers. Teachers who have handicapped students mainstreamed into their classes are not required to participate in planning individualized education programs (IEPs), but they have much to gain by doing so.

Basically, the IEP is planned by a staff of several people, including the child's special education or resource teacher, another representative or administrator of the school, the child's parents, at least one person qualified in evaluation, and other teachers who may be invited because of mainstreaming in their classes. The IEP meeting is your best opportunity to learn about the child's true capabilities and disabilities, what is actually expected of the child (both in your class and in general) and where you can go for help if you need it. It is also your best chance to augment the child's IEP and share your own professional opinions and judgments.

The meetings are usually not long, and there are usually few of them that teachers (except those who teach special education) need to attend. If there is one thing that a teacher can do to prepare for and understand a mainstreamed handicapped child, attending the IEP planning meeting is it.

Unfortunately, few general education teachers have attended IEP planning sessions and so some specialists have stopped inviting them. Therefore, you may have to seek out such opportunities when you learn you will have a mainstreamed child in your class. Follow-up contact with the special education or resource teacher will ensure that the goals of the placement are realistic and are met and will help to avoid counterproductive efforts between teacher and student.

The least restrictive environment mandate has been the most misinterpreted. Countless teachers, administrators, parents and even children think that all handicapped children must be fully mainstreamed because of this mandate, which is absolutely not true! This mandate means that when a child can benefit from being mainstreamed and the rest of the class will not be disrupted by such action, the child should be placed in a regular class. The student must be approximately at a level to fit into and gain from the class or else mainstreaming would create a most restrictive environment and be a direct defiance of the law (Goldman, 1980). If you have heard or experienced a "horror story" due to a poorly placed, mainstreamed child it was probably because of someone's deliberate breach or misinterpretation of this provision. Consider this quotation from the Federal Register (August 23, 1977):

> To the maximum extent appropriate, handicapped children, including children in public or private institutions or other care facilities are educated with children who are not handicapped, and ...special classes, separate schooling or other removal of handicapped children from the regular educational environment occurs only when the nature of severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily...it should be stressed that, where a handicapped child is so disruptive in a regular classroom that the education of other students is significantly impaired, the needs of the handicapped child cannot be met in that environment. Therefore regular placement would not be appropriate to his or her needs. (p. 42497)

Does least restrictive environment always mean mainstreaming? Certainly not. It sometimes will mean placement in special classes or, in extreme cases, in a special residential school equipped to manage severe problems.

The due process for parents and children mandate usually affects general education teachers very little, but it can and should be used by them to correct poor mainstream placements. It provides for the duty of the school to keep parents informed, parents' right to review records, parental consent required for certain actions, independent educational evaluation, and impartial due process hearings when placement is challenged or procedural safeguards are not observed.

If you believe a child has been improperly placed, you should request or have the parents request a reevaluation of the placement. As a last result, you could act as an agent of the public education agency by calling for a hearing (Claire, 1980). This provision is to protect all persons, including the teacher, against harms created by inappropriate placement. In fact, if a student who has been placed in your class causes failure, decreased self-esteem and disruption of the handicapped student or other students, it is your right, professional duty and moral obligation to press for reevaluation and a more suitable placement, if necessary.

The personnel development mandate simply means that teachers and support personnel must be trained and provided with materials to aid their working with mainstreamed children. Provisions for confidentiality of information and protection in evaluation procedures are closely related sections meant to ensure fairness to students and parents. They affect the general classroom teacher only when a due process hearing is required.

The Conception of Misconceptions

Wholesale mainstreaming without regard for teachers or students (handicapped or otherwise) was never the intention of PL 94-142. Misconceptions began when PL 94-142 was monitored by simple nose counting. Early administrators thought that regardless of the effect on staff, handicapped students or other students, the way to comply with PL 94-142 was to have a lot of mainstreamed noses to count, without regard to the students' needs. Some administrators were so caught up in the number game that they pressured their staffs to increase mainstreaming. A truer understanding of the federal mandates and increased reliance on the judgments of special education specialists have begun to alleviate some of the problems.

If administrators had a hand in starting the rumors and misconceptions about mainstreaming, teachers had a larger part in spreading them. Have you heard much talk in your teachers' lounge about successfully mainstreamed children? You probably don't realize that there are many success stories in your own school because you only hear the "horror stories" about a few poorly placed students.

Thankfully, most mainstreamed students are well placed in the regular classes and are not noticeable unless their handicap is visible. Only a small percentage of mainstreamed students require much special help to succeed. Some teachers have had mainstreamed students in their classes and did not even know it. Typically, mainstreamed students are well liked by their peers, and they often put forth extra effort to ensure their own success in regular classes.

Still, some teachers have had successful mainstream experiences and still complain and condemn mainstreaming if they have only one bad experience. This negativism can be easily corrected.

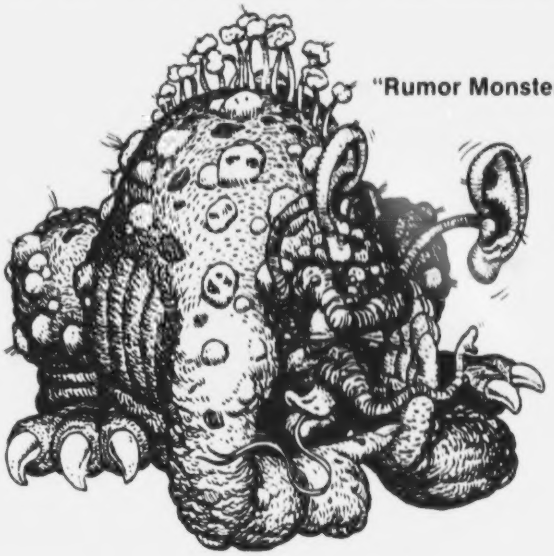
1. If you have a successfully mainstreamed student in your class, talk about your experience to other teachers and share your proven techniques with them.
2. If you have a poorly placed mainstreamed student, request reevaluation or alternate placement through the proper channels. Request a hearing if necessary, but do not gripe and complain in the teachers' lounge.
3. If you have no real experience with handicapped students, do not spread the rumors of others. This level of professionalism should be expected of all teachers.

As Goldman (1980) puts it,

> Mainstreaming, if it is to be carried out in the way it was designed, should be placing students into regular classrooms when they have demonstrated the academic and social skills to profit from regular class placement. Such a move should not necessitate major changes in either teaching techniques or preparation for the regular teacher. Although some minor accommodations may be necessary, these should not require teachers to abandon their normal styles of teaching...the special education teacher must bring the child up to an academic level that allows the youngster to fit comfortably into the group...if the child is not ready academically or fails to adjust socially, the receiving classroom teacher must be willing to report this fact. (p. 263)

Summary

If, because of rumors in your school, you are expecting a deaf, mute, blind, mentally retarded, emotionally disturbed quadriplegic to arrive any minute in your advanced woodworking class, you are not atypical. The good thing is that the rumors are not true. The whole intent of PL 94-142 is not to encourage haphazard mainstreaming but to meet the needs of handicapped children most effectively and to facilitate their joining the mainstream of activity. Other students also benefit from encountering handicapped persons in their regular classes. They learn to accept children who may be different than they are and to appreciate each person's capabilities.



"Rumor Monster"

Even though mainstreaming is generally successful, the rare poor placement receives all the publicity. Teachers must stop spreading rumors and start working to rectify improper placements. When these goals are achieved, the level of stress regarding mainstreaming in the school will diminish, and the beneficial qualities of PL 94-142 will be evident to all.

The Palmer Scales

A key issue in placing handicapped students in regular education classrooms is determining the appropriateness of the placement. This determination depends on the goals of the classroom, the requirements for participation and the ability of the student to match those requirements. Should such a match not be possible, the ability of the individuals involved to adapt existing instructional practices and materials is critical.

The Palmer Scales were developed to aid in this process. These scales allow regular classroom teachers and special educators to determine the appropriateness of placement for an individual student, with administrative involvement as needed. The scales are designed to be used before placement and as a decision-making tool.

The first page of the Palmer Scales requests general information and allows for the determination of goal appropriateness. The general information included is student name and the type of class the student is involved in. Next is space for a brief statement of the goals for the class. These goals may be found in a curriculum guide, the textbook, teacher's lesson plans or from interviews with the classroom teacher. A determination is then made regarding the appropriateness of the class goals for a student. This determination can reflect goals already on the IEP or ones to be added to it.

Should page one indicate that the goals are inappropriate, the person completing the scales then uses Form A (the last form in the Palmer Scales). It is designed to get administrators involved in the decision-making process. Form A helps determine that since the class goals do not meet the needs of the student being considered, placement would be inappropriate. Using this form allows the decision for appropriateness of goals to be made by the teacher in the regular class and the special educator, with appropriate involvement from the student and parents. If they decide the class is inappropriate, the administrator becomes involved. By completing Form A, the administrator and involved parties agree that the goals of the regular class are inappropriate to meet the needs of this student.

Scale 1 of the Palmer Scales asks for information about the reading required for performance in the classroom. Once the required reading level is determined, the teacher decides whether the student can or cannot use these skills. If the answer is yes, the teacher continues to the next scale. If the student cannot easily demonstrate these skills, a decision must be made about the ability of the individuals involved to accommodate this problem. Information on special materials for accommodation techniques and strategies is available from the Suroski Center. If a specific technique for adaptation is known, any references can be included and responsibility for its use can be assigned. If no adaptation is possible and the student cannot easily demonstrate the required skills then the teacher is referred again to Form A. The remaining scales require the same procedure.

Conclusion

The Palmer Scales are a decision-making tool for use by parents, teachers, students and other concerned individuals regarding the appropriateness of regular class placement. The scales only require administrator involvement when an inappropriate placement has been determined. The scales can be modified to meet the requirements of each school situation. For more information about these scales, contact the Suroski Center, Special Education Department, University of Northern Iowa, Cedar Falls, Iowa 50613.

The Palmer Scales

For Use in Determining the Appropriateness of Educational Environments, Curricula and Goals for Mildly Handicapped Adolescents

developed at
The Suroski Center
Special Education Department
The University of Northern Iowa
Cedar Falls, Iowa

The following scales were selected and developed to help determine the appropriateness of placement of mildly handicapped students in "regular classes" at the junior and senior high school levels. Much of this work is based on material from *Exploring Issues in the Implementation of PL 94-142, LRE Developing Criteria for Evaluation of the Least Restrictive Environment Provision*, published by Research for Better Schools, Inc., and funded by the Bureau of Education for the Handicapped, U.S. Office of Education, Department of Health, Education and Welfare, May 1979.

General Information and Goal Appropriateness

Student Name ______________________________

Class Under Consideration ____

Meeting Time _______________

Teacher ________________________

The goals for this class include: (these may be found in a curriculum guide, the textbook, lesson plan, or from interviews with the teacher)

These goals are considered to be appropriate to the needs of this student and are reflected in the student's IEP?

yes   no

If yes, continue to Scale 1

If not, please provide a rationale here and then complete Form A:

Scale 1

Required Reading

None	As much as 1-5 pages per week	5-14 pages per week	15-24 pages per week	25-30 pages per week

The student can easily read this amount?

yes no

If yes, go on to Scale 2.

If not, can an adaptation be made to accommodate for this problem?

yes no

If yes, describe adaptation here.

Technique name: ____

Source: ____

Person responsible: ____

If no, please list the factors that limit the possibility of adaptation and complete Form A.

Scale 2

Required Math Skills

None	Addition Subtraction Other______	Addition Subtraction Multiplication Division Other______	Addition Subtraction Multiplication Division Measurement Fractions Other______	Addition Subtraction Multiplication Division Measurement Fractions Money Decimals Other______

The student can easily use these skills?

yes no

If yes, go on to Scale 3.

If not, can an adaptation be made to accommodate for this problem?

yes no

If yes, describe adaptation here

Technique name: ______________________________

Source: ______________________________

Person responsible: ______________________________

If no, please list the factors that limit the possibility of adaptation and complete Form A.

Scale 3

Required Writing

None	just words and phrases	a few pages per week (essay ques.)	5-10 pages per week (themes)	10 or more pages per week (term paper)

The student can easily demonstrate this skill?
yes no

If yes, go on to Scale 4.

If no, can an adaptation be made to accommodate for this problem?

yes no

If yes, describe adaptation here.

Technique name: ____________________

Source: ____________________

Person responsible: ____________________

If no, please list the factors that limit the possibility of adaptation and complete Form A.

Scale 4

Required Social Skills

None	Personal Other	Personal Responding Other	Personal Responding Initiating Other

The student can easily demonstrate these skills?

yes no

If yes, go on to Scale 5.

If no, can an adaptation be made to accommodate for this problem?

yes no

If yes, describe adaptation here.

Technique name: ______________________________

Source: ______________________________

Person responsible: ______________________________

If no, please list the factors that limit the possibility of adaptation and complete Form A.

Scale 5

Other Required Skills (Please specify) ____________________

____

The student can easily demonstrate this skill?

yes no

If yes, implement plan.

If no, can adaptation be made to accommodate for this problem?

yes no

If yes, describe adaptation here.

Technique name: ____________________

Source: ____________________

Person responsible: ____________________

If no, please list the factors that limit the possibility of adaptation and complete Form A.

Form A

This sheet is to be used in the event of a response that indicates the placement of a student would be inappropriate given the goals, instructional techniques or requirements of a given classroom.

Have the building administrator and IEP team been made aware of the limitations indicated on the attached sheet and are they willing to agree that the limitations preclude the possibility of placement in this class on the basis of its inappropriateness?

yes no

If yes, include signatures here:

Administrator ____________________

Special Education Teacher ____________________

"Regular" Class Teacher ____________________

Parents ____________________

____

Student ____________________

Others ____________________

Date ____________________

If no, what course of action will be taken?

The Individualized Education Program (IEP)

The individualized education program (IEP) is an excellent source for assessing students, identifying individual needs and developing instructional activities for the learner. Each IEP should include as a minimum:

A statement of the child's present level of educational performance.

A statement of annual goals, including short-term instructional objectives.

A statement of the specific special education and related services to be provided to the child, and the extent to which the child will be able to participate in the regular educational programs.

The projected dates for initiation of services and the anticipated duration of the services.

Appropriate objective criteria and evaluation procedures and schedules for determining, on at least an annual basis, whether the short-term instructional objectives are achieved.

Industrial arts teachers should be involved in developing the IEP as either members of the development team or as consultants to that team. The IEP should serve as a guide for curriculum modifications needed to accommodate a handicapped student in an industrial arts program and to document the need for support resources.

The other materials in this section may help you understand and participate in IEP development.

Development of Individualized Education Programs (IEPs) for the Handicapped in Industrial Education

This pamphlet is based on a review and synthesis paper entitled "Development of Individualized Education Programs (IEPs) for the Handicapped in Vocational Education" by Lorella A. McKinney and Donna M. Seay. The original review and synthesis paper is one of 16 produced in 1979 under the Knowledge Transformation Project of the National Center for Research in Vocational Education, The Ohio State University, Columbus, Ohio.

Overview

PL 94-142, the Education for All Handicapped Children Act, places responsibility for identifying and educating handicapped persons (ages 3 to 21 by 1980) with all educators, not just special educators. In addition, this legislation specifies in detail how the individualized education program (IEP) for each handicapped student shall be developed at the local level. Often, industrial educators are expected to be members of the IEP development team without the advantages of proper training and experience.

Industrial education teachers who will be working with the handicapped need to understand the elements and steps involved, the legislative mandates, the minimum legal requirements, and the issues and problems related to IEP development. The following questions and answers provide an overview of these concerns.

What is Required by Law?

PL 94-142, the Education for All Handicapped Children Act (1975), ensures a free, appropriate public education to every handicapped individual, ages 3 to 18 by September 1, 1978, and 3 to 21 by September 1, 1980. In the legislation, handicapped children are defined as those who are:

- mentally retarded
- hard of hearing
- deaf
- speech impaired
- visually handicapped
- seriously emotionally disturbed
- orthopedically impaired
- other health impaired
- deaf-blind
- multihandicapped
- having specific learning disabilities

These students are handicapped, if, because of their impairments, they need special education and related services. The law requires that each handicapped child in need of special education and related services be provided with a written individualized education program (IEP).

The Education Amendments of 1976 (PL 94-482) specify that the vocational education amendments are compatible with the requirements of PL 94-142.

What is the IEP?

The IEP is a written statement of educational needs and related services for handicapped persons, ages 3 to 21. The IEP states:

- the student's present level of educational performance
- annual learning goals for the student, including short-term instructional objectives
- specific educational services to be provided to the student, and the extent to which the student will be able to participate in regular educational programs

- projected date for initiation and anticipated duration of services
- objective criteria, evaluation procedures, and schedules for determining whether instructional objectives are being achieved

What Are the Major Implications of IEP Development?

Effective IEP development implies:

- a strong commitment on the part of the administrators and community members to the provision of special education and related services for handicapped individuals
- emphasis on the capability and performance of handicapped students, using criterion-referenced measures
- least restrictive alternative placement
- team planning in the development and use of the IEP
- extended and coordinated support services
- a focus on individual growth and development
- preservice and in-service education of vocational educators to help them deal with handicapped students
- flexible scheduling for students and their assessment conferences
- ongoing evaluation of goals and objectives
- released time for multidisciplinary teams of school personnel to work on IEP development
- modified fiscal resources to reflect the effort involved in IEP development

Who Should Be Involved in the Development of IEPs?

The law requires a multidisciplinary team comprised of:

- a representative of the student's local education agency
- teacher(s) (industrial education and others)
- parent(s) or guardian
- handicapped individual as appropriate

Additional IEP team members as appropriate

- physician
- therapist
- social worker
- psychologist
- counselor
- employer
- administrator(s)

What Are Industrial Education Teacher Roles and Requirements in IEP Development?

The vocational teacher's roles may involve the following activities:

- instruction
- diagnosis/prescription
- behavior management
- advocacy
- referral
- counseling

The vocational teacher's requirements include the following:

- being a participating member of the IEP team
- being a qualified contributor to development of the IEP
- being a capable monitor and evaluator of IEP results
- being involved in educational planning and placement
- taking responsibility for program delivery

What Skills and Knowledge are Required of Team Members in Effective IEP Planning?

Team members should demonstrate:

- a sensitivity to and an awareness of: varieties of occupations and corresponding life styles, individual capabilities related to work and life style, public and peer attitudes, need to establish career goals and objectives
- the utilization of work sample experiences to: assess work behaviors and skills, determine interests and aptitudes, identify vocational education needs
- the application of useful information in setting realistic career goals
- planning for and implementing of simulations and problem solving experience
- facilitating the accessing of education-work opportunities

What are the Evaluation Functions in IEP Development?

Evaluation is a continuous processing involving:

- diagnosis and assessment
- elimination of bias and barriers
- assessment of annual goals
- guarantees of due process
- reporting of student progress
- work placement reviews

What are Critical Issues, Problems and Needs Affecting IEP Development?

The following are some of the problems, issues, and needs involved in the development of IEPs:

Federal versus local/state control of education is an issue implied by the specifications of P.L. 94-142 which determine that local districts shall develop IEPs in a particular manner.

Time demands for instruction versus time demands for planning. This is a critical point in most states because vocational education agencies have not developed the necessary state and local mechanisms for the coordination and cooperation required to develop and implement IEPs.

- Limited time and money to prepare personnel, facilities and instructional materials
- Vocational educator's need for
  - involvement in the IEP development
  - appropriate vocational materials and equipment
  - teacher training programs in teaching handicapped individuals
  - adjustments of class loads based upon special needs of handicapped learners
  - elimination of personal and environmental barriers
  - assistance in the classroom
- Employer acceptance and role delineation
- Ensurance of parent involvement

Example
Individualized Education Program (IEP)

School System: Stoneville County

Student Name Mary Marks
Student Address 813 N. 7th Avenue W.
Birthdate/Age March 30, 1969

School Walleye School District
Grade/Program 11th Lrng. Disab./Auto
Teacher(s) Mrs. Morley and Mr. Garst

Dominant Language English
Health Conditions Mild Seizures

IEP Coordinator Mrs. Morley

Date Written 6/5/85 Annual Review Date 5/30/86

Placement(s)	Initiated	Duration
Lrng. Disab. Prog.	8/28/85	6/10/86
Auto Body Prog.	8/28/85	Sch. Yr.

Dates of IEP Meetings June 5, 1985; May 30, 1986

IEP Team Members:

Name	Title
Mrs. Morley	Special Education Teacher
Mr. Harkin	High School Principal
Mr. & Mrs. Carter	parents
Mr. Garst	Auto Body Teacher
Ms. Mary Marks	Student

Strong Learning Mode Visual, hands on performance

Special Media and/or Materials:
Vocational applied math - auto body
Bergwell and Prentice-Hall auto body materials

Present Lev.of Ed. Performance (Academic, Psychomotor, Personal-Social, Self-Help, Prevocational/Voc'l.)

Academic Skills: Mary performed at the following levels on recently administered achievement tests. Reading 3.5 (greatest problem word attack skills). Math 4.0 (deficiency in the areas of measurement, fractions and long division). She earned "C" grades in all courses taken last year.

Psychomotor Skills: Mary demonstrated good psychomotor skills with a slight problem in fine finger dexterity.

Personal-Social Skills: Mary is shy, withdrawn and prefers working by herself. She communicates poorly with other students in group situations.

Self-Help Skills: No significant problems in this area.

Prevocational/Vocational Skills: Mary satisfactorily completed career exploratory experiences at the junior high school level and a course in career ed. at the 9th grade level. She has indicated an interest in the auto body repair occupation.

Extent of Participation in Regular Educational Progams/Activities:
Mary will participate in the auto body program one hour per day, five days per week, during this academic year.

Special Services/Frequency	**Person/Agency Respon.**	**Date Initiated**	**Duration Date**
Remedial Reading (1 period per day)	Reading Specialist	Sept. 16, 1985	May 30, 1986
Social Work (1 home visit per month)	School Social Worker	Oct. 1, 1985	May 30, 1986

Parents/Guardian(s) Signature______________________________

____

Student Name Mary Marks

Program(s) Learning Disability, Auto Body Repair

Date IEP was Written June 5, 1985

Annual Goal(s) Identify, Remove & Replace Automobile Body & Frame Components

Review Date 6/3/86

IEP Coordinator Mr. Garst

Quarter/Semester Goal(s)

Review Date 1/8/86

Instructional Task(s) Selected tasks listed in curriculum guide for body and frame component replacement

	Short-Term Instructional Objectives	Instructional Strategies Methods and Materials	Evaluation of Instructional Objectives		
			Performance Criteria	Tests/ Evaluation Procedures	Eval. Date/ Results M = Mastery I =Incomplete
1.	Demonstrate an understanding of auto body structure and auto body safety procedures	Read textbook assignments. Observe demonstrations. Observe filmstrip (Bergwall, "Safety in the Auto Body Shop"). Identify different metal configurations and frame construction on a car	Must describe metal configurations and their purpose. Must explain frame shapes and their construction. Must explain low center of gravity (All explanations with 70% accuracy. Must score 100% on safety test)	Written or oral tests on metal configurations and frame shapes. Written or oral safety test worksheet assignments	10/28/85 - M
2.	Name the parts of a vehicle and describe their functions	Read textbook assignments. Observe demonstrations on body parts and panels. Complete worksheet activities	Must explain inner construction differences between separate frame and body and unitized MacPherson strut system at 70% accuracy. Must identify parts at 90% accuracy	Identification test on actual car. Oral quiz on body and frame component functions. Worksheet assignments	11/11/85-M

Short-Term Instructional Objectives	Instructional Strategies Methods and Materials	Evaluation of Instructional Objectives		
		Performance Criteria	Tests/ Evaluation Procedures	Eval. Date/ Results M = Mastery I =Incomplete
3. Remove, replace and align front or rear doors	Read textbook assignments. Observe demonstrations on doror removal and replacement. Observe Prentice Hall, "Auto Body Repair: Metal Work" (Filmstrip #5) Practice door removal and replacement	Must follow correct procedures at 90% accuracy without missing any safety step. Door must align with no more than ¼" gap on all sides and be flush with the body	Observation of actual performance using checklist for this task. Oral quiz. Worksheet assignment	
4. Remove and replace grills and gravel deflectors	Read textbook assignments. Observe demonstration on wire connections and grill replacement. Observe filmstrip #1 (Bergwall "Auto Body Tools Explained")	Must follow correct procedures at 90% accuracy without missing a safety step. Finished product must be correctly aligned and free from scratches	Observation of actual performance using a checklist for this task. Oral quiz on procedures. Worksheet assignment	

Student Name Mary Marks

Program(s) Learning Disability, Auto Body Repair

Date IEP was Written June 5, 1985

Annual Goal(s) Improve Math Performance in Measurement, Fractions, Multiplication and Long Division

Review Date 6/3/86

IEP Coordinator Mrs. Morley

Quarter/Semester Goal(s)

Review Date 1/8/86

Instructional Task(s) Measurement, Fractions, Multiplication, and Division

Short-Term Instructional Objectives	Instructional Strategies Methods and Materials	Evaluation of Instructional Objectives		
		Performance Criteria	Tests/ Evaluation Procedures	Eval. Date/ Results M = Mastery I =Incomplete
1. Identify gradients on a ruler or scale	Complete practical workbook exercises. Review text and instructional materials. Observe demonstrations	Identify gradients of ⅛, ¼ and ½ inch correctly	Teacher produced written test - Workbook assignments	9/10/85-M
2. Measure with a ruler or scale	One-on-one instruction on measuring. Complete workbook assignments	Measure object length to the nearest 1/8, ¼ and ½ inch with 80% accuracy.	Teacher produced performance test. Workbook assignments	10/18/85-M
3. Identify fractional parts of objects	Review text and instructional materials. Observe fractional shapes of objects. Listen to teacher presentation	Identify fractional parts of objects with 85% accuracy	Teacher produced test. Workbook assignments	11/5/85-M
4. Convert factions to decimals and decimals to fractions	Listen to teacher presentation. Read text assignments. Complete workbook practice exercises	Convert factions to decimals and decimals to fractions with 90% accuracy	Teacher produced test. Workbook assignments	12/13/85-I

	Short-Term Instructional Objectives	Instructional Strategies Methods and Materials	Evaluation of Instructional Objectives		
			Performance Criteria	Tests/ Evaluation Procedures	Eval. Date/ Results M = Mastery I =Incomplete
5.	Multiply two- and three-digit numbers by two-digit numbers	Listen to teacher presentation. Read text assignments. Complete workbook exercises	Complete 10 two-digit multiplication problems and 10 three-digit by two-digit multiplaction problems with 80% accuracy	Teacher produced test. Workbook assignments	
6.	Divide four-digit numbers by on- and two-digit numbers	Listen to teacher presentation. Read text assignments. Complete workbook exercises	Complete 10 four-digit by one-digit division problems and 5 four-digit by two-digit division problems with 80%	Teacher produced test. Workbook assignments	

Student Name Mary Marks

Program(s) Learning Disability, Auto Body Repair

Date IEP was Written June 5, 1985

Annual Goal(s) Improve Reading Comprehension Skills

Review Date 6/3/86

IEP Coordinator Mrs. Morley

Quarter/Semester Goal(s)

Review Date 1/8/86

Instructional Task(s) Comprehend and explain written materials

	Short-Term Instructional Objectives	Instructional Strategies Methods and Materials	Evaluation of Instructional Objectives		
			Performance Criteria	Tests/ Evaluation Procedures	Eval. Date/ Results M = Mastery I =Incomplete
1.	Identify and state the main ideas of a short story on automobiles	One-on-one teacher/ student instruction Practice reading exercises	State main ideas of a reading assigment with 80% accuracy	Teacher selected reading materials. Tests	11/15/85-M
2.	Make judgments and draw inferences and conclusions in reading assigments	Individual teacher and peer tutoring. Practice reading exercises	State judgments, inferences and conclusions of reading materials with 80% accuracy	Teacher selected reading materials. Tests	
3.	Read and interpret directions	One-on-one teacher/ student instructions	Read and explain five sets of written directions on auto body repair with 100% accuracy	Teacher selected auto body repair directions from manufacturers' repair manuals	
4.	Increase reading speed	Individual tutoring Practice reading exercises	Increase reading speed by 25%	Teacher selected reading test	

Student Name Mary Marks

Program(s) Learning Disability, Auto Body Repair

Date IEP was Written June 5, 1985

Annual Goal(s) Improve Verbal Communication and Personal-Social Skills

Review Date 6/3/86

IEP Coordinator Mrs. Morley

Quarter/Semester Goal(s)

Review Date 1/8/86

Instructional Task(s)

		Evaluation of Instructional Objectives		
Short-Term Instructional Objectives	Instructional Strategies Methods and Materials	Performance Criteria	Tests/ Evaluation Procedures	Eval. Date/ Results M = Mastery I =Incomplete
1. Develop verbal communication skills in group work situations	Read text and instructional materials on communicating in group situations. Participate as a committee member in the auto body VICA section social committee	Demonstrate improved communication skills to the teacher's satisfaction	Teacher observations of group situations	
2. Develop personal-social skills	Read text and instructional materials on personal-social skills. Role play personal-social skills in classroom activities. Practice personal-social skills in VICA social and educational activities	Demonstrate improved personal-social skills to the teacher's satisfaction	Teacher observations of personal-social behaviors in classroom, laboratory and VICA activities	

Short-Term Instructional Objectives	Instructional Strategies Methods and Materials	Evaluation of Instructional Objectives		
		Performance Criteria	Tests/ Evaluation Procedures	Eval. Date/ Results M = Mastery I =Incomplete
3. Become a part of the group and participate in group activities	Practice group participation skills as a VICA member serving on several committees and activities	Demonstrate group participation in classroom and VICA activities to the teacher's satisfaction	Teacher observations of group participation in classroom and VICA activities	
4. Develop new friends	Assign students to work closely with one or more peers on the buddy system	Demonstrate closer ties with other students to the teacher's satisfaction	Teacher observations of improving relationships with other students	

Chapter 4

Managing the Environment in the Mainstream Classroom

> It is by acts and not by ideas that people live.
>
> *Anatole France*

Chapter 4

Managing the Environment in the Mainstream Classroom

The environment in a classroom is very important in encouraging students to learn. Students often say they most appreciate teachers who "care." Students want and need support from teachers, other students and parents. When given support, they are encouraged to learn and they encourage others to learn. The following ideas can help to establish a supportive environment for disabled and non-disabled students.

Acknowledging that Everyone Has Problems. It is often helpful for the student to know that he or she is not unique in having problems, including making mistakes. Everyone has problems and makes mistakes. Our problems and mistakes vary in nature and in extent. Let your students know that we all do some things well, but other things give us problems. In the process of achieving, we usually make many mistakes.

Appreciating Individual Attributes. Public recognition of personal and physical traits can help the student acquire a more positive self-concept. Help each student make the most of his or her strengths and do the best with what they have acquired.

Verbalizing Concern for Others in the Classroom. It is helpful for the teacher to express and demonstrate concern for students. It is also helpful for students to express and demonstrate concern for other students. Examples of verbal expressions: "Agnes is absent because she had a seizure this morning. When we get a chance, let's let her know we missed her being here." "Bernard said that you want more time to put extra special designs in your project. I'm willing to talk about doing that."

Teachers and students can demonstrate they care by:

1. "Offering" help when it appears help is needed.
2. "Giving" help.
3. Talking about a problem when somebody wants to talk about it.
4. Allowing extra time or arranging for extra time to complete.
5. Rearranging a personal schedule to help another,etc.

Heeding the Importance of Nonverbal Behavior. Physically touching each student in ways that say "you are important to me" is as necessary as hiding one's dismay when a student having a difficult time shatters your well-timed schedule.

If you or the students are uncomfortable or have difficulty with touching, use other ways of communicating concern, such as a smile, wink or supportive hand gesture.

Approaching Conflicts Nonjudgmentally. Ask students what happened rather than why to give them a chance to give their perception of the conflict. Also ask, "What are we going to do about it?" Such discussion can help the students learn to share in accepting responsibility for their actions.

Using Action-Oriented Problem Solving. Group problem solving encourages students to appreciate a variety of contributions from individuals and reinforces a sense of community. It also allows students to recognize and reinforce strengths of individuals in a performance-based situation.

The teacher needs to consider his or her role in helping the disabled student. Teachers should not feel guilty about the limited time they can give to each student. Hopefully, there are enough resource teachers to attend to the various needs of the student. Mainstreaming may or may not turn out to be the method of choice when teaching the disabled student, but its potential for increasing concern and helpfulness is unlimited.

Reference: B.K. Keogh and M.L. Levitt, "Special Education in the Mainstream: A Confrontation of Limitations?" *Focus on Exceptional Children,* March, 1976, 8, 1-12.

Twenty-Nine Practical Methods of Dealing with Behavior Problems

Adapted from materials developed by C. Baker at the University of Northern Colorado, Greeley, Colorado.

1. Provide structure. Students with behavior problems usually function better in a structured situation vs. a situation with little structure or organization. Gradually reduce the amount of structure and provide alternatives.

2. Have the student sit close to the teacher.

3. Provide the student with an "office" or study carrel. These could be made from large cardboard boxes, old cardboard voting booths, etc.

4. If there is a disturbance, try and stop it immediately. Usually, the longer you wait, the more difficult it is for the student to remove him or herself from the disturbance.

5. Find appropriate ways to show anger. If the teacher yells or throws a book when angry, why can't the students?

6. Try to help the student feel liked and appreciated. Make a conscious effort to praise the student. Most behavior-problem students have a great deal of negative interaction with the teacher. Reward the absence of disturbing behavior. Reward the student for not swearing or hitting or interrupting. Catch them being good.

7. Be consistent! Don't make threats if you're not going to follow through. Usually, it only takes two or three times of being consistent and following through and the student knows you mean what you say. If you are going to make them stay in from recess if they don't finish their spelling assignment, follow through.

8. Let the student know you like them as a person, but you do not approve of their behavior.

9. Tape the child with videotape or audiotape so you can show them their behavior. Turn on the tape recorder (without their knowing) when they are being noisy or disruptive. Later, play it back to them privately. Often, students don't realize how noisy and disturbing they are. Ask the high school media class to come in and videotape your students.

10. Give the student an incentive for working. The reward should always be for an amount of work (15 math problems done 90 percent correctly) rather than an amount of time (30 minutes working on math).

11. Use non-verbal cues. Both the teacher and the student can use a non-verbal cue to communicate a need or instruction. For example, if you notice a student is about to have a temper tantrum, you could pull on your ear in a certain way, indicating only to the student that he or she was to quietly leave the group and do a predetermined activity. The activity might be to walk outside to the slide and back or go hit the pillows behind the divider in the corner of the room. The student could use the same signal to inform you of an oncoming temper tantrum. The purpose is to find a more appropriate way to show emotions or release tensions. Gradually, the tension-releasing activities can be made more appropriate. A student could use non-verbal cues to indicate an assignment is too difficult. The student might lay his or her pencil vertically on the desk to indicate an assignment is too hard. You would then casually ask several students to do a similar but alternative assignment. Many students don't like to openly admit they cannot do an assignment; they would rather be a behavior problem.

12. When disciplining students, use as few words as possible. Rather than telling them to go back to their seat, lead them back.

13. Don't argue with students. Tell them the way it is and walk away. If you must discuss an incident with a student, use "I" instead of "you." "I am disappointed because... ." "I am upset because... ." rather than "You did this or that."

14. Give the child an opportunity for movement. Provide time out of the desk to let off excess energy or nervous energy.

15. Do not make assignments too overwhelming. Break them into short parcels or segments. An example would be cutting a math paper with four rows of math problems into four pieces of paper with only one row each. Give the student one row at a time.

16. Avoid using labels such as "emotionally disturbed," "behavior problem," "show-off," "bully," etc.

17. If the student uses abusive language, refuse to be shocked. Ask the student to define the term. Let the student know you don't approve of his or her language.

18. Prepare with the student a chart or record of progress in the area of behavior. Ask the student to try and increase the amount of appropriate behavior, such as not hitting, paying attention or not getting out of his or her seat. Let the student keep the chart and observe the progress.

19. Don't try to deal with all the problems a student has at once. Work on one behavior at a time. When the problem of disturbing others is improved, work on not getting out of one's desk.

20. Transition times often cause a higher incidence of behavior problems. For example, if the students have just returned to the classroom from a wild kickball game and you want them to do a quiet activity, you may want to do something to help with the transition. One suggestion is to take five minutes and hear about the kickball game. Although you may lose five minutes from the quiet activity, it may be better than losing 15 minutes if you don't give them an opportunity to discuss. Another suggestion is to play soft background music to change the mood or tempo of the classroom. Another possibility is doing a relaxation exercise. Two are very briefly described below:

a. Everyone be quiet and:

1. Listen to the sounds your body is making—breathing, etc.
2. Listen to the sounds in the room.
3. Listen to the sounds outside our room (in the hall, room next door, etc.).
4. Listen to the sounds in our room.
5. Listen to the sounds your body is making.

(Allow 60-90 seconds for steps 1-5)

b. Have the students place their feet on the floor, fold their hands, close their eyes and relax. Say the following:

1. Visualize something peaceful such as blue sky, warm day, peaceful valley.
2. Take a deep breath—let it out.
3. Curl your toes and hold them tight—relax—take a deep breath—let it out.
4. Tighten your calves—relax—take a deep breath—let it out.
5. Tighten your thighs—relax—take a deep breath—let it out.
6. Continue with other parts of body up to the face.
7. Open your eyes, turn to page 67, etc. (begin the quiet activity). Relaxation exercises may be helpful any time you need to change the mood of the class such as weather changes, before holidays or vacations, etc.

21. Point out to the child the many things he or she does know and has accomplished. You or the child might make a list of words, math facts, etc., he or she knows. The purpose is to eliminate frustration because of feelings of inadequacy or lack of ability.

22. Don't have a lot of rules. Keep the rules simple and easy to understand. Behavior-problem students need to know exactly what the limits are—what can and cannot be done and the consequences.

23. Give the child jobs which make him or her feel useful.

24. Don't discuss problems in front of the class. Discuss it later, in the hall, or quietly at the student's desk.

25. Praise the effort or the task completed rather than the child. Try to make praise as natural as possible. Teachers need to smile more at students who are considered behavior problems. (In most cases, the majority of interaction between teachers and behavior problem students is negative.)

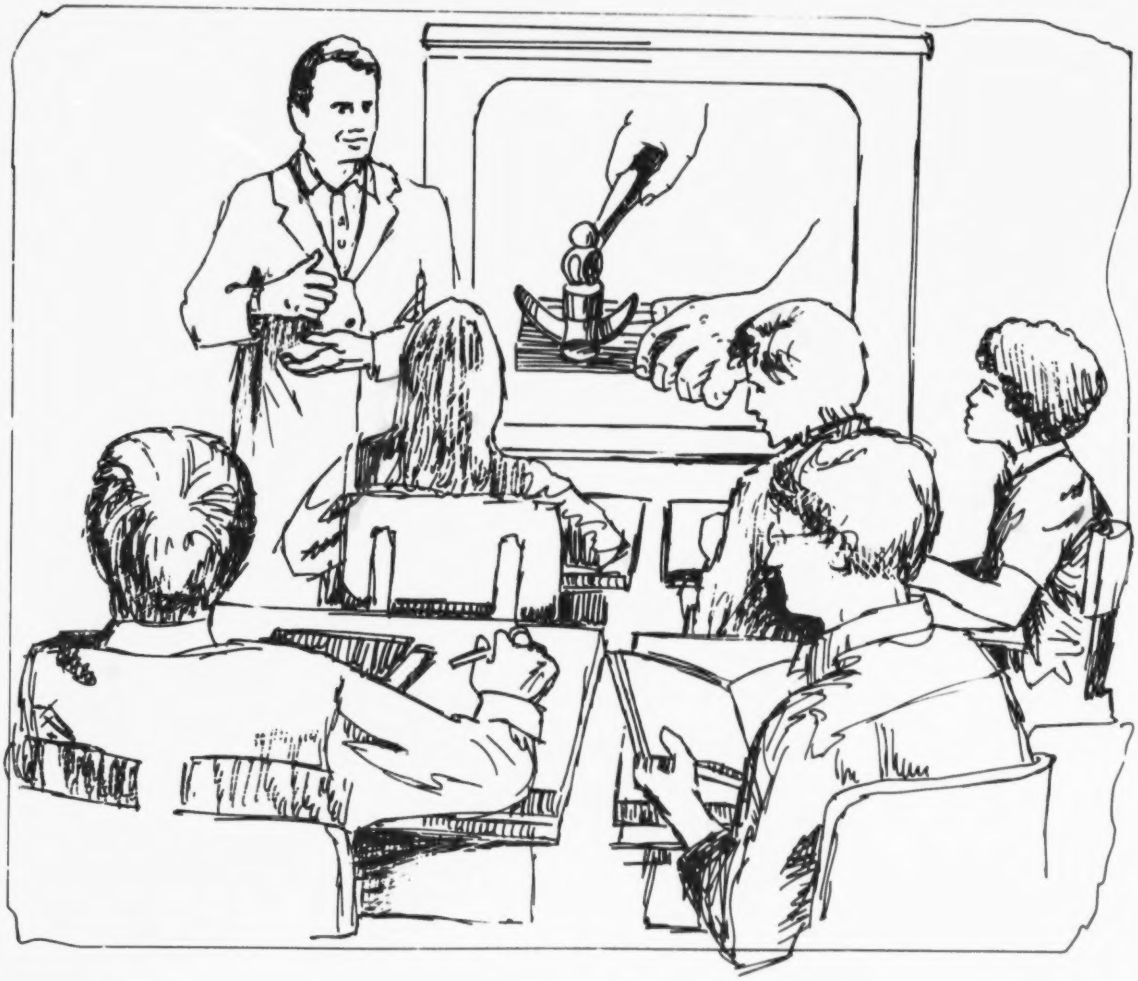
26. Don't tell a student that an assignment or behavior is "easy" and you know he or

she can complete the assignment or behave properly. It may not be easy for the student—and if the student does accomplish it, you've belittled the task.

27. Be as exciting and interesting a teacher as possible. Use interesting materials, manipulatives, high interest/low vocabulary books, films, tapes and records.

28. Be prepared! Students whose teachers have well-planned lessons and know what they are doing usually have fewer behavior problems.

29. Have fun! Students whose teachers really enjoy what they are doing have fewer behavior problems. On your way to school in the morning tell yourself you're not going to let Randy get on your nerves, you're going to smile a lot, and you're going to really have fun!



Additional Management Tips

Student behavior can disrupt the classroom environment. Disabled and non-disabled students require a certain degree of management to keep them on task. These tips can help.

Techniques

1. Planned Ignoring: The behavior has limited power and will soon exhaust itself. This denies the student's gratification in getting attention. Respond to the motivation for the behavior, not the manifestation of it. Determine if this behavior is likely to spread to others.

2. Signal Interference: Signals which show disapproval or control. Standing up, eye contact, frown, hand gestures. These signals are most effective if the teacher does not accompany them with a show of anger or hostility.

3. Proximity Control: Stand by a student having difficulty. This is a source of protection, strength and identification. It helps the teacher detect a student who doesn't understand a lesson or know how to begin as a motivation or misbehavior. Move or rotate in a quite, supportive manner which gives assurance rather than fear.

4. Interest Boosting: Tap students' interest and help them mobilize their forces. Just showing a personal interest may get them on the track.

5. Humor: It breaks the tension in many situations which both parties would lose in a direct confrontation. It relaxes the atmosphere and helps people return to what they should be doing.

6. Hurdle Lessons: Assume that a student cannot do what is asked rather than will not do what you asked. Students do not always volunteer during the directions. The goal is to get the student going. Belittling him or her for being inattentive postpones the progress of the individual and the group. Rotate in the class and pick the student up where he or she is. Help him or her advance without losing face in the process.

7. Reconstructing the Classroom Program: Be able to deviate from the schedule. Extenuating forces make it sometimes impossible to follow a standardized course. As a teacher, do you have an inordinate need to follow routine without accounting for these extenuating forces? Students may need to talk about or channel their emotions before the class can involve itself in the next assignment.

8. Support from Routine: Provide the guidepost for behavior. Provide a daily and/or weekly schedule. If routines are changed, give advanced warning and involve the students in the change.

9. Direct Appeal to Value Areas: Students have internalized some values. You can appeal to the student/teacher relationship, the consequences of this act, the group code, and teacher power and authority.

10. Removing Seductive Objects: This may include moving a student to another part of the room if the seductive object is one which cannot be moved. One source of conflict results when a teacher confiscates a student's objects. Some teachers have found it helpful to have a receipt form which they give to the student in return for the object. The receipt states the object, and when and how it can be reclaimed.

11. Antiseptic Bouncing: Remove the student from class without the intent of punishing. Getting a drink of water, cooling the face in the restroom, and going to talk the problem over with the principal or another teacher are a few suggestions. The removal is to provide the student with some time to get over his or her feelings. It is not punishment. It involves nonpunitive management.

12. Physical Restraint: Cross the arms across the chest and hold the hands from behind. Talk softly that things will be all right. A student has lost control and is as much afraid of him or herself as you or the class are. Have a student get another teacher or the principal to remove the student from the class while you hold him or her. Be ready for abusive language or swearing. When you feel the anger has subsided and emotions are under control, release the student. Accept the face-saving actions of making a sly remark. Ask him or her to clean up. Explain the action to the class, indicating that the child has regained self-control and will return. Your lack of anger and fear will be important examples for the class. You have said to the student, "I care enough about you to protect you from your own frightening impulses."

Chapter 5

Modifying the Learning Environment and Materials

But understanding alone is not enough. When I understand something but do not put it into action, nothing has been accomplished either in the outside world or within myself.

Barry Stevens
Person to Person

Chapter 5

Modifying the Learning Environment and Materials

When you begin to work with the special education teacher on your curriculum, these steps may be helpful:

Step 1

Try to adopt existing materials for use as they are. A suggested list appears in the following section. The list contains many materials written at low reading levels.

Step 2

Try to adapt existing materials or strategies. Suggestions are included in the following section and on the microcomputer disk in the appendix.

Step 3

Develop new materials in conjunction with the special education teacher. Sample materials are included in the following section along with a suggested format for developing additional materials. You may also refer to *Vocational Special Needs: Preparing T & I Teachers*, by John L. Scott and Michelle Donnelly Sarkees, American Technical Publishers, Inc., Alsip, Illinois.

Commercially Available Materials

Industrial Arts - Draw and Plan

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Ed.
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History I.A.; Woods Metals Electronics, etc.
7 Format	Student text $10.50; study guide $3.15; teacher's resource guide $1.29

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	Getting Started In—Drawing and Planning-Woodworking Metalworking—Electricity & Electronics
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Drawing and planning - woodworking - metals - electronics
7 Format	Student text $3.30

1 Pub	McKnight
2 Date	1978
3 Title	Basic Industrial Arts
4 Int Lev	7-10
5 Rdg Lev	Regular level
6 Cross	Electricity; woodworking; metal
7 Format	Book either all together or in individual areas; comes with activities and worksheets

1 Pub	State of Iowa-DPI
2 Date	1969
3 Title	Industrial Arts for Iowa Schools
4 Int Lev	For teacher use
5 Rdg Lev	Unknown
6 Cross	Woods; plastics; metals; electricity; mechanics
7 Format	Book either all together or in individual areas; comes with activities and worksheets

1 Pub	State of Iowa-DPI
2 Date	1969
3 Title	Industrial Arts for Iowa Schools
4 Int Lev	For teacher use only
5 Rdg Lev	Unknown
6 Cross	Woods; plastics; metals; electricity; mechanics
7 Format	Book format with objectives listed in each area and activities

1 Pub	General Motors - PR Staff
2 Date	NA
3 Title	Can I Be a Draftsman
4 Int Lev	7-9
5 Rdg Lev	Regular level
6 Cross	NA
7 Format	Pamphlet discusses the job in an auto company

1 Pub	McKnight Publ. Co.
2 Date	NA
3 Title	Exploring Careers in Technology
4 Int Lev	Secondary text
5 Rdg Lev	General Ed.
6 Cross	All area of Iowa
7 Format	Textbook explores careers in area of Iowa

Industrial Arts - Electronics

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Ed.
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History I.A.; Woods - metals - electronics - etc.
7 Format	Student text $10.50; study guide $3.15; teacher's resource guide $1.29

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	Getting Started In—Drawing and Planning-Woodworking-Metalworking-Electricity and Electronics
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Drawing and planning - woodworking - metals - electronics
7 Format	Student texts $3.30

1 Pub	General Electric
2 Date	NA
3 Title	General Electric Co
4 Int Lev	7-12
5 Rdg Lev	Regular Ed.
6 Cross	NA
7 Format	Film/motion pictures

Industrial Arts - Home Maintenance

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Edition
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History I.A.; Woods - metals - electronics - etc.
7 Format	Student texts $10.50; study guide $3.15; teacher's resource guide $1.29

Industrial Arts - Machinery

1 Pub	Cambridge
2 Date	NA
3 Title	Machine Technology Part 1 - Basic Machine Technology
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Machine-wood
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Cambridge
2 Date	NA
3 Title	Machine Technology Part 2 - Engine Lathe Accessories
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Machine -safety - measurement
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Cambridge
2 Date	NA
3 Title	Machine Technology Part 3 - Intermediate Engine Lathe
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	NA
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Cambridge
2 Date	NA
3 Title	Machine Technology Part 4 - Milling
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	NA
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Career Aids Inc.
2 Date	NA
3 Title	Shop Safety for EMR Students
4 Int Lev	EMR
5 Rdg Lev	NA
6 Cross	Safety - machines
7 Format	Color filmstrip/cassette/teacher's guide $29.95

Industrial Arts - Measurement

1 Pub	Cambridge
2 Date	NA
3 Title	Machine Technology Part 2 - Engine Lathe Accessories
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Machine - safety - measurement
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Opportunities for Learning
2 Date	NA
3 Title	Measures in a School Shop
4 Int Lev	NA
5 Rdg Lev	NA
6 Cross	NA
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Cambridge
2 Date	NA
3 Title	Welding Set 2 - Basic Shielded Metal ARC Welding
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Metals - safety
7 Format	13 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Cambridge
2 Date	NA
3 Title	Welding Set 3 - Tig and Mig (Industry) Welding
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Metals - safety
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Ed.
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History - I.A.; Woods - metals - electronics - etc.
7 Format	Student Text $10.50; study guide $3.15; teacher's resource guide $1.29

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	Getting Started In—Drawing and Planning - Woodworking Metalworking - Electricity and Electronics
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Drawing and planning - woodworking - metals - electronics
7 Format	Student Text $3.30

1 Pub	Houghton Mifflin Co.
2 Date	NA
3 Title	General Mathematics for the Shop
4 Int Lev	7-11
5 Rdg Lev	General Ed.
6 Cross	NA
7 Format	Text book-resource/text on Gen. Math concepts used in the shop

Industrial Arts - Leather

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Ed.
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History - I.A.; Woods-metals-electronics-etc.
7 Format	Student text $10.50; study guide $3.15; teacher's resource guide $1.29

Industrial Arts - Plastics

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Ed.
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History - I.A.; Woods-metals-electronics-etc.
7 Format	Student text $10.50; study guide $3.15; teacher's resource guide $1.29

1 Pub	Iowa State University Press
2 Date	1968
3 Title	Introduction to Plastics
4 Int Lev	7-11
5 Rdg Lev	Regular Ed.
6 Cross	NA
7 Format	Book with pictures and words

Industrial Arts - Safety

1 Pub	Cambridge
2 Date	NA
3 Title	Machining Technology Part 2 - Engine Lathe Accessories
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Machine - safety - measurement
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Cambridge
2 Date	NA
3 Title	Welding Set 2 - Shielded Metal ARC Welding
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Metals - safety
7 Format	13 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Cambridge
2 Date	NA
3 Title	Welding Set 3 - Tig and Mig (Industry) Welding
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Metals - safety
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Career Aids Inc.
2 Date	NA
3 Title	Shop Safety for EMR Students
4 Int Lev	EMR
5 Rdg Lev	NA
6 Cross	Safety - machines
7 Format	Color filmstrip/cassette/teacher's guide $29.95

1 Pub	Opportunities for Learning
2 Date	NA
3 Title	Shop Safety
4 Int Lev	NA
5 Rdg Lev	3-4
6 Cross	NA
7 Format	Filmstrip/cassette $29.95

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Ed.
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History - I.A.; woods - metals - electronics - etc
7 Format	Student text $10.50; study guide $3.15; teacher's resource guide $1.29

Industrial Arts - Woods

1 Pub	Cambridge
2 Date	NA
3 Title	Machine Technology Part 1 - Basic Machine Technology
4 Int Lev	Adult
5 Rdg Lev	NA
6 Cross	Machine - woodworking
7 Format	14 video tapes (15 min. ea.) $3,500.00; student videotext $9.00

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	General Industrial Education 6th Ed.
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Am. History-I.A.; woods - metals - electronics - etc.
7 Format	Student text $10.50; study guide $3.15; teacher's resource guide $1.29

1 Pub	Webster Div. McGraw-Hill
2 Date	NA
3 Title	Getting Started In—Drawing and Planning - Woodworking-Metalworking - Electricity and Electronics
4 Int Lev	7-12
5 Rdg Lev	5-6
6 Cross	Drawing and planning - woodworking - metals - electronics
7 Format	Student texts $3.30

Publishers for I.A.

1 Name Cambridge
2 Department The Adult Education Company
3 Street 888 Seventh Avenue
4 City New York
5 State New York
6 Zip 10106
7 Phone (800) 221-4764
8 Ref. NA

1 Name Cambridge University Press
2 Department NA
3 Street 32 E. 57th Street
4 City New York
5 State New York
6 Zip 10022
7 Phone (800) 431-1580
8 Ref. NA

1 Name Career Aids, Inc.
2 Department NA
3 Street 8950 Lurline Ave., Dept D5
4 City Chatsworth
5 State California
6 Zip 91311
7 Phone (213) 341-8200
8 Ref. NA

1 Name Career Aids Inc.
2 Department NA
3 Street 910 N. Main Street Box 5486
4 City Orange
5 State California
6 Zip 92667
7 Phone (800) 854-4014
8 Ref. NA

1 Name General Electric
2 Department Consumer Affairs
3 Street 35 Rix Mill Road
4 City New Concord
5 State Ohio
6 Zip 43762
7 Phone (800) 626-2000

1 Name Houghton Mifflin
2 Department NA
3 Street 1900 S. Batavia
4 City Geneva
5 State Illinois
6 Zip 60134
7 Phone (800) 225-1464
8 Ref. NA

1 Name Iowa State University Press
2 City Ames
3 State Iowa
4 Zip 50010

1 Name McGraw-Hill
2 Department Webster Division
3 Street 1221 Avenue of the Americas
4 City New York
5 State New York
6 Zip 10020
7 Phone 212-997-1221
8 Ref. NA

1 Name McKnight Co.
2 P.O. Box 2854
3 City Bloomington
4 State Illinois
5 Zip 61701

1 Name Opportunities for Learning, Inc.
2 Department Dept. 5NE
3 Street 8950 Lurline Avenue
4 City Chatsworth
5 State California
6 Zip 91311
7 Phone 213-341-2535
8 Ref. NA

1 Name State of Iowa - Department of Education
2 Department Publications Section
3 Street Grimes State Office Building
4 City Des Moines
5 State Iowa
6 Zip 50319

Teacher's Worksheet for Determining Individual Style

The "Teacher's Worksheet for Determining Individual Style" helps match a student's preferred style to a regular classroom teacher's style. It can also be used to evaluate your own style and look at options to include in your teaching. You may find other uses that more closely fit your needs.

Directions: Place a check on the line next to each statement that describes your teaching methodology. Mark as many areas as apply to your teaching style and practices.

Classroom Organization

Grouping

______ Large Groups
______ Small Group for Short Term
______ Small Group according to Student Activity
______ Individual Instruction
______ Peer Tutoring
______ Cross-Age Tutoring
______ Independent Self-Instruction
______ Learning Centers
______ Other: ____________________

Methods of Instruction

______ Teacher Directed
______ Student Directed
______ Materials Directed
______ Job Sheets
______ Programmed
______ Activity Cards
______ Learning Activity Packets
______ Other: ____________________
____

Classroom Management

Grading System

______ Homework
______ Class Discussion
______ Special Projects
______ Tests
______ Contracts
______ Conferences
______ Other: ____________________

Rules

______ Differentiated for Some Students
______ Express
______ Implied
______ Consequences for Violations Known
______ Other: ____________________

Reward System

______ Verbal Praise
______ In Front of Peers
______ Alone
______ Notes and Reports Home
______ Grades
______ Free Time
______ Special Activity
______ Teacher Time
______ Tangibles
______ Progress Charts
______ Other: ____________________

Methods of Presentation

Type of Presentation

______ Verbal
______ Demonstration
______ Lecture
______ Movie/Videotapes
______ Slides, Filmstrips
______ Discussions
______ Tape Recording
______ Other: ______________________

______ Written
______ Textbooks
______ Reprints
______ Worksheets
______ Tradebooks
______ Blackboard
______ Other: ______________________

______ Content
______ Expected Amount of Learning Same for All
______ Time Provided for Learning Same for All
______ Concept Level Expected Same for All
______ Prior Learning Required
______ Pretesting
______ Other: ______________________

General Structure

______ Outlines
______ Study Guides
______ Preview Questions
______ Provide Immediate Feedback
______ Students Actively Involved
______ Students Passively Involved
______ Provide Cues, Mnemonic Devices
______ Other: ______________________

Methods of Practice

General Structure

______ Required Amount Varies by Student
______ Time for Practice Varies by Student
______ Large Group
______ Individual
______ Teacher Directed
______ Individualized
______ Independent
______ Grades Assigned
______ Sequenced
______ Interactive
______ Other: ______________________

Level of Response

______ Copying/Modeling
______ Recognizing
______ Recall with Cues
______ Recall without Cues
______ Other: ______________________

Materials

______ Worksheets
______ Books
______ Audio/Visual
______ Guided Discussion
______ Other: ______________________

Methods of Testing

Type

____ Verbal
____ With Teacher/Student
____ Tape Recorder
____ Written
____ Term Papers
____ Essay
____ Recall With/Without Cues
____ Match
____ Multiple Choice
____ Other: ______________________
____ Demonstration
____ Project
____ Process
____ Product
____ Other: ______________________

Structure

____ Group
____ Individual
____ Amount to be Tested Varied by Student

When

____ Pop Quizzes
____ Weekly
____ Individual/Group
____ Upon Completion
____ Other: ______________________

Reprinted from *Selecting Instructional Objectives, Methods and Materials for Special Education Students in the Regular Classroom*. Diane Arnold. Los Angeles, California: California Regional Resource Center, 90005. 1979.

Modifying Learning Material

Industrial technology courses require written assignments, reading and computation exercises. Many formats are used to present ideas to expedite learning and to make learning more enjoyable. Here are 25 suggestions for modifying curriculum materials to accommodate students who learn in different ways. They have been summarized and modified from multiple resources found in *Individualizing Instruction for Handicapped Students at the Secondary Level* by Catherine Benson, Midwest Regional Resource Center, 1980.

Written Material in Industrial Technology: 25 Suggestions for Helping Students Learn

1) Written assignments or reading material should be typed or printed to ensure legibility. Typewritten material is best because it ensures consistency in the way it is presented to or encountered by learners.

2) Printed or typed material should be sharp and not faded.

3) Printed material should not be crowded together. Single or double spacing between letters could help. Double or triple spacing between lines also helps. Use wider-spaced writing paper when needed—when students have trouble writing small enough to fit on regularly used writing paper.

4) Emphasizing important words helps attract attention to vocabulary.

To emphasize words use:

A. Bigger Letters
B. **Darker Print**
C. Different Color Print
D. Highlighted print in two or more colors. Trace over print to highlight.
E. Boxed-In [words]
F. Magic Marker Highlights
G. Underlining
H. Smaller Letters
I. Different Print Style
J. L-i-n-e-s b/e/t/w/e/e/n letters

5) The use of simple sentences reduces confusion. A simple sentence should express one thought or one direction.

6) Complex thoughts or multiple directions can be broken down to a simple one-step process. Number each part of a set of directions or complex thoughts and list them vertically on a page.

A. Read Chapter 4 (pages 100 to 131).
B. Do the 10 questions on the worksheet (p. 11 of your notebook).
C. List the words that you do not understand from Chapter 4 on the bottom of the worksheet.
D. Bring your book to class on Thursday.
E. Bring your worksheet for Chapter 4 to class on Thursday.

7) Use check-off blanks ____ or boxes ( ) to establish and reinforce task completion (see examples used above). As the student completes the tasks, he or she can check them off one at a time.

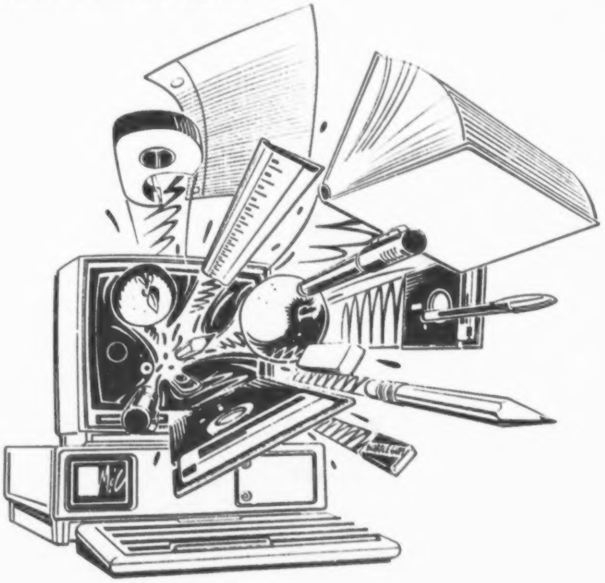
8) Use simple vocabulary when possible. This does not imply avoiding mastery of important vocabulary in vocational training.

9) Color code worksheets or readings in certain topic areas to help students organize material.

10) Break large sections of text into smaller parts. Make assignments based on smaller sections of reading.

A. For lengthy chapters or books, establish questions after each page or couple of pages rather than after the whole chapter or book. This will break learning into smaller parts that can be more easily accomplished.

11) For questions on worksheets, also give the page number(s) in the text or reading materials where the answers can be found.



12) Repeat important sentences, phrases or paragraphs by:

A. Putting them in the margins
B. [Boxing them in and emphasizing the print]
C. Doing summaries at the beginning of the text (introductory organizer)
D. Doing summaries at the end of the text (summary organizer)

13) Do text in programmed learning format. Text is broken into small sections. A series of questions follows each section. If all questions are mastered the student goes on. If not, the student rereads—repeats and repeats. Overlearning is emphasized through this approach to curriculum material.

14) Emphasize important concepts, phrases, or sentences by:

A. Using markers—*, [ ], ..., "", ( ), !!!!, // //
B. (Box the total phrase, concept or sentence)
C. **Put total sentence or phrase in darker print**
D. Use Magic Marker to do highlights
E. **Put entire phrase or sentence in bigger letters**
F. Use different color print
G. Underline entire sentence or phrase
H. Use smaller letters
I. Use different print style
J. Highlight sentence or phrase in two or more colors via tracing

15) Use constant terminology throughout text or written assignments when referring to a concept.

Example: Don't use the word "resin" in one place and "rosin" or "gum" in another unless you are certain the students know the words are synonomous.

16) Use cues within reading material to direct students.

A. Start [start] (start) //start//
B. **stop** Do worksheet #2
C. (Go to page 24 for vocabulary word meanings)
D. Continue reading after doing question 9
E. ((Major vocabulary word))
F. !!!! See page 21 in student notebook for explanation of concept!!!!

17) Give examples for new terms!

"Resin"
Resin is gummy.
Resin can be too thick.
Use resin to finish wood.

18) Use captions (comic book style), pictures, maps or graphs to support the meanings of words or ideas.

19) Game formats increase motivation and help students apply concepts and meanings.

Example: Tongue Twisters
Ray's resin ran wrong and wrecked Ray's rail.
Harold's hoist hung high but hit Harold's hair.

Consider using:
word find
crosswords
mystery solving stories
applied games—stocks and bonds

20) Use duplicate handouts so students can compare information to the teaching aids being used during lectures and discussions.

21) Use interactive text formats to involve students in text.

Examples:

A. Leave blanks in sentences and have students fill in blanks from text that is read
B. Provide outlines of information. Have students fill in detailed information in spaces left between outline headings
C. Give words or word meanings and have students match the meanings and words. Do the same for concepts
D. Give crises situations and selections for solving crises. Match or have students solve crises through their own input
E. Give lists of tasks and have students rank tasks in proper sequences or preferred sequences. Do the same for behaviors, safety, procedures, etc.
F. Provide a problem and have students choose from solutions or provide their own solutions

22) Use manipulative materials to sequence ideas, solve problems or examine options.

Example: Handouts contain information that is listed and spaced to allow cutting out the text. Students cut out the pieces of information and sort them into proper sequences or categories of information. The information could even be in the form of a puzzle.

23) Provide concept cards instead of concepts being printed on regular handouts. One concept is put on each card. Cards can be reviewed before or after classes. Students can build files of cards. Cards can be used to prepare for tests, labs or contests on problem solving.

24) Use newspapers for applying learning and transferring learning to real life situations. Cut articles, copy them, and use as is.

25) Support all text via audiovisual reinforcement when possible.

A. Use overhead visuals to review handouts and other materials
B. Tape-record texts so students who can't read can listen
C. Show films that support concepts and main ideas
D. Use the blackboard to review and reinforce handouts and other material
E. Use tactile materials (Braille) for blind students as well as audio materials to support the curriculum
F. Use calculators, typewriters, tape recorders and computers to allow students who cannot write to do tests, homework, lab reports, etc.

Resources for Modifying Curriculum Materials

Instructors most often need additional time or outside help to modify or develop materials. Consider using:

- -Special education resource teachers in your own building
- -Interested students seeking special assignments
- -Media centers and library staff. Check with your local building librarian and AEA media center director
- -Iowa Commission for the Blind - 4th and Keo Way, Des Moines. Tel.515/283-2601
- -Deaf Services of Iowa, Tel. 515/281-3164 or Iowa School for the Deaf, Tel. 712/366-0571
- -Iowa Braille and Sight Saving School - Vinton. Tel. 319/472-5221
- -AEA special education consultants for blind, deaf, mental disabilities, learning disabilities, speech impaired, behavioral disorders and talented and gifted
- -Mountain Plains Regional Resource Center, Drake University, Des Moines
- -Bureau of Special Education, Department of Education, Des Moines. Tel. 515/281-3176.
- -Special Needs Consultants, Department of Education, Des Moines. Tel. 515/281-3912.
- -Iowa Curriculum Assistance Systems, N008 Quadrangle, Iowa State University, Ames 50011

Curriculum Modules

One approach to modifying curriculum is to develop modules or packets that allow for individual learning rates. This approach is most often used when an industrial technology teacher needs to develop instruction for an entire special needs class. However, it can be used for any group of students.

What elements in curriculum material facilitate student learning? One answer is to analyze how you choose materials when first learning about a topic. For example, let's imagine that you have gone to the library to review some "how-to" books on a new topic of interest. How do you decide which books to check out? Most likely, you look for clear and interesting illustrations. You want the text to be clearly stated at your ability level. You also want new technical terms to be explained. If these elements are not present, you move to another book on the subject. Unfortunately, students often do not have this choice. By developing or choosing materials that are "user-friendly," you help all students learn successfully.

Curriculum Components for Modules

This section presents a recommended format for curriculum modules and actual curriculum examples that use this format. Each topic below relates to one part of the module. These will be explained individually.

1. Task Analysis Form

The instructor outlines student activities on the task analysis form. The specificity of these steps depends on the ability level of the students, and is arbitrarily determined by the instructor.

An important addition to the task analysis form is the safety category. This allows the instructor to record needed areas for safety instruction as he or she thinks through the instructional unit.

2. Learning Plan

The learning plan is simply a lesson plan sheet for the instructor. However, some important additional categories are added. These include safety considerations, evaluation techniques and adaptation strategies. These categories allow a place to record information as needed.

3. Supplementary Learning Plan

This form can be used by the special educator to provide supplementary instruction for the industrial technology instructor. Preferably, this is filled out during a conference between the instructors.

For example, a student may be having difficulty with terms. These can be listed on this sheet and the special education teacher can help the student review the terms in the resource room. If a computer disk is available with the terms, it can be referenced on this form. The special education teacher can use the disk in helping the student.

4. Student Module

The student module provides clear, step-by-step instructions for the student. The first page provides information on what the student will learn, or the instructional objectives. It also provides management information such as the module number. The next page ("Words") introduces new terminology and definitions. After this, the student is told what is to be done, ("What You Do") which relates to the steps in the task analysis. At a logical point, the student is asked what is known ("What You Know"). This provides a formative evaluation for the instructor to determine how students are progressing. Additional "What You Do" and "What You Know" sheets are used as needed to complete the instructional unit.

The final evaluation ("What You Have Learned") is the last part of the student module. If it is to be used for a recorded grade, then it might not be included in the module.

Some suggestions for the modules are:

a. Relate terms to simple concepts (e.g. cement and mud).

b. Provide frequent illustrations related to the information.

c. Use an appropriate reading level.

d. Use a large type or print size and limit the information on a page. Handwritten material should be printed neatly in straight lines. Light blue guidelines can be used for this, which will not reproduce when copies are made.

The curricula in this booklet show some examples of materials using this approach. These materials have been field tested with special students.

Task analysis is essential in implementing any learning-by-doing teaching strategy. Many instructors use the technique without realizing it. Interestingly, this technique lends itself to educating special needs students as well as all other students in industrial arts. Learning this technique can improve and simplify curriculum planning for all students.

Course: ______________________ Name: ______________________

Grade: ______________________ Date: ______________________

Instructional Task Analysis

Instructional Objective(s): ______________________

____

____

Instructional Unit: ______________________

____

____

Instructional Tasks (what student does):

Steps	Possible Hazard	Method of Prevention

1. ______________________
2. ______________________
3. ______________________
4. ______________________
5. ______________________
6. ______________________
7. ______________________
8. ______________________
9. ______________________
10. ______________________
11. ______________________
12. ______________________
13. ______________________
14. ______________________
15. ______________________
16. ______________________
17. ______________________
18. ______________________
19. ______________________

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Course: ______________________ Name: ______________________

Grade: ______________________ Date: ______________________

Learning Plan

Instructional Objective(s): ______________________

Instructional Unit: ______________________

Materials/Resources/Tools Required: ______________________

Safety Considerations: ______________________

Instructional Steps: ______________________

Evaluation Technique: ______________________

Adaptive Strategies: ______________________

Needed Changes: ______________________

Instructional Unit:

Learning Plan

Task No.______

Performance Task

Performance-Based Task Activities

Performance-Based Task Check

Instructional Unit:

Supplemental Learning Plan

Task No.______

Performance Task

Task Terminology

Essential Math Operations

Essential Coordinated Movements and Related Concepts

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Module No.______________

Vocational Area ______________________________

Program__________________________________

____

Occupation ________________________________

Instructional Unit____________________________

Performance Task____________________________

Performance-Based Task Activities____________________

You Will:

Words

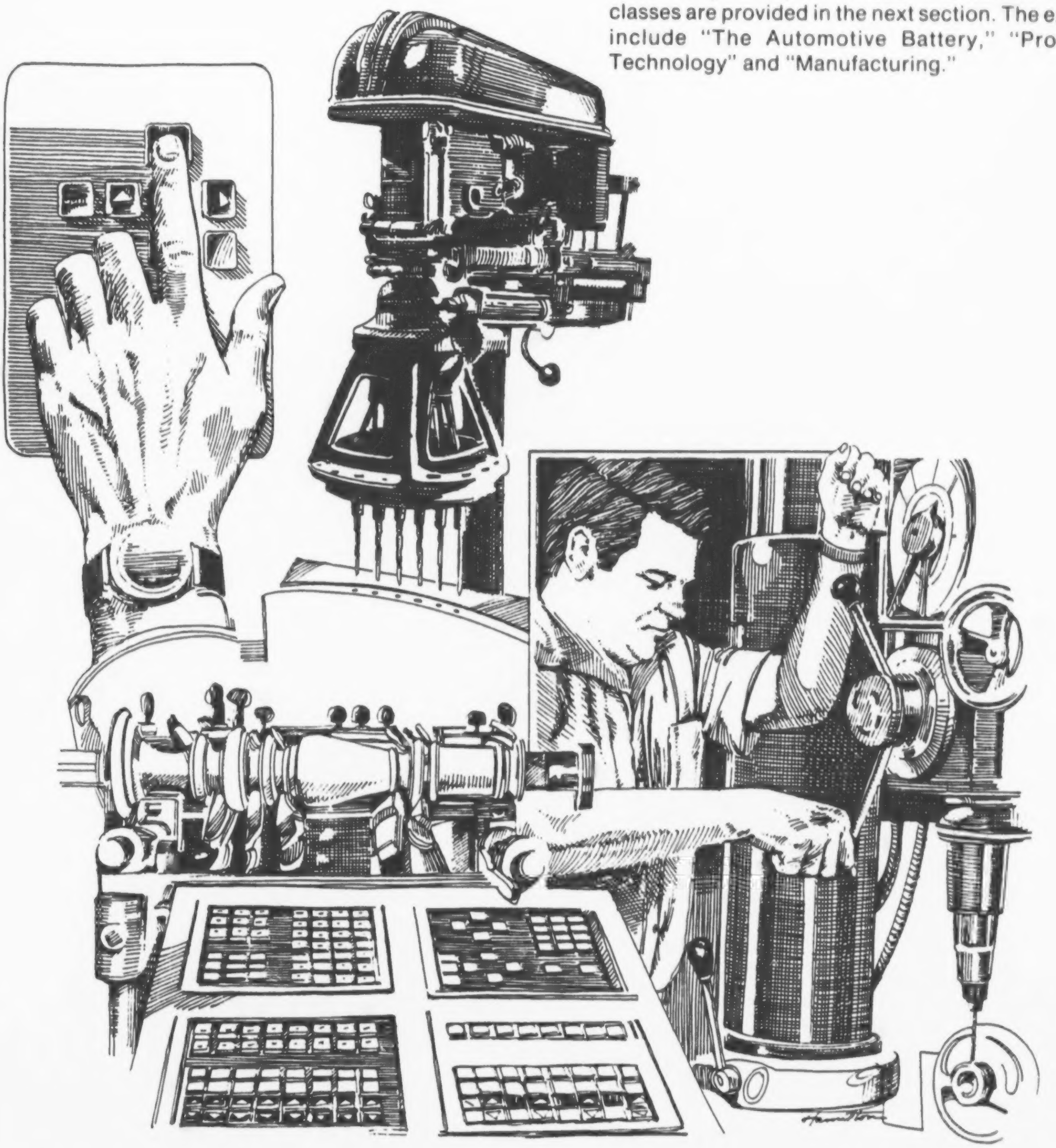
How to Spell	What it Means

What You Do:

What You Know:

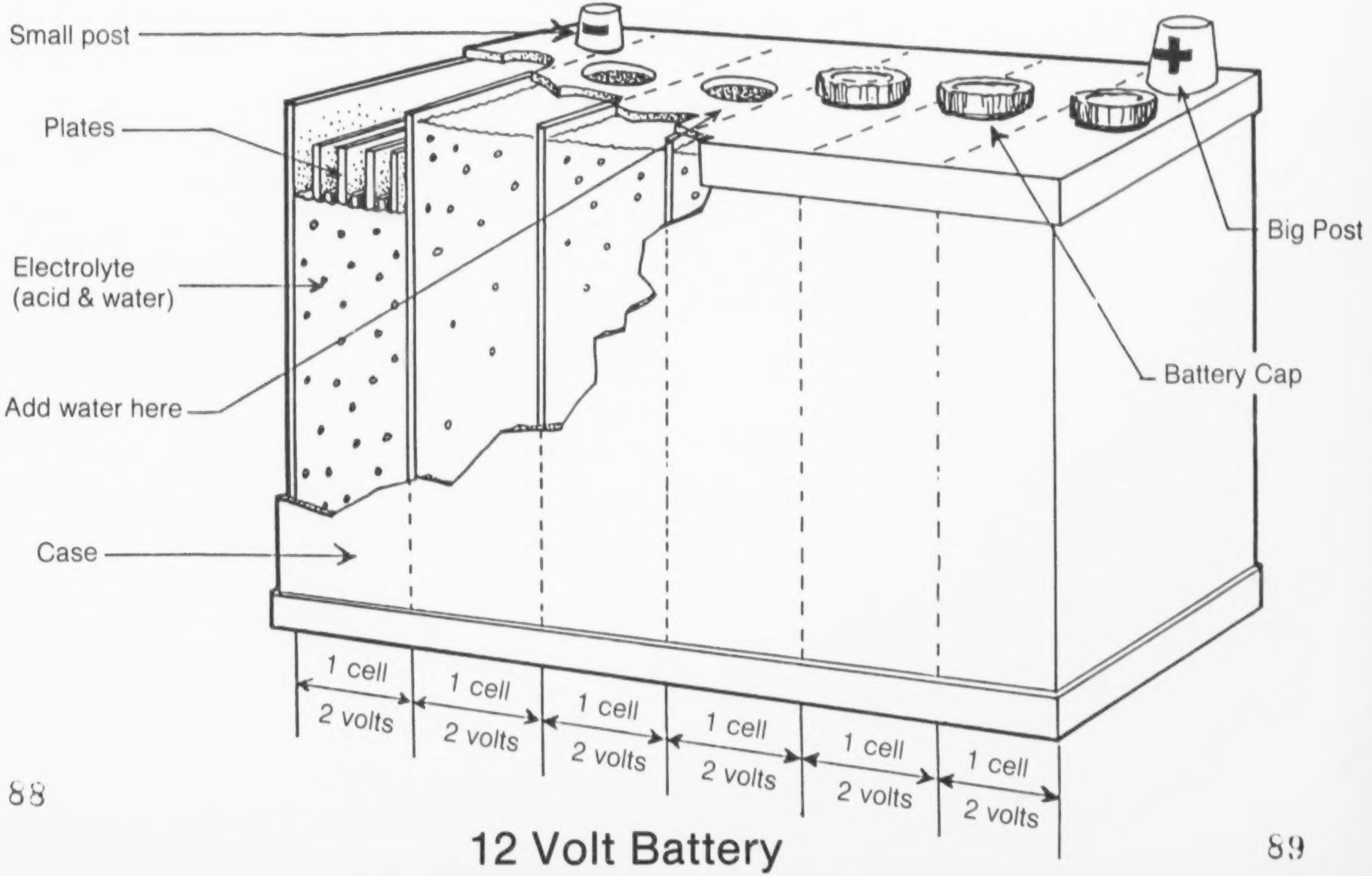
What You Have Learned:

Examples of curriculum modules designed specifically for special needs learners in separate classes are provided in the next section. The examples include "The Automotive Battery," "Production Technology" and "Manufacturing."



Southeast Polk Senior High

The Automotive Battery


Small post
Plates
Electrolyte (acid & water)
Add water here
Case
Big Post
Battery Cap
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts

12 Volt Battery

Course: Auto Mech I
Name: Stalter
Grade: 10-12
Date:

Instructional Task Analysis

Instructional Objective(s): Student will be able to service the automobile battery and understand its construction and hazards

Instructional Unit: Auto Battery Service

Instructional Tasks (what student does):

Steps	**Possible Hazard**	**Method of Prevention**
A. Vocabulary		
B. Checking Electrolyte level 1. Remove caps 2. Look in cell 3. Adding H_2O if low	Coming in contact with acid	Wear safety glasses and synthetic clothing
C. Cleaning battery connections 1. Remove ground cable first 2. Remove positive cable 3. Cleaning battery posts and inside of cable clamps 4. Install positive cable first 5. Install negative cable 6. Apply protective coating	Explosions and/or coming in contact with acid	
D. Clean battery case 1. Rinse with warm water 2. Use rags/paper towels to wipe stubborn residue	Acid coming in contact with skin	Safety glasses

Course: Auto Mech I

Name: Stalter

Grade: 10-12

Date:

Learning Plan

Instructional Objective(s): The student will be able to service the automobile battery and understand its construction and hazards

Instructional Unit: Cleaning battery connections

Materials/Resources/Tools Required: Safety glasses, lab coat, battery, two wrenches, pliers, sandpaper

Safety Considerations: Safety glasses and protective clothing, eye wash bottle

Instructional Steps: Refer to task analysis sheet

Evaluation Technique: Observation and check list, written test

Adaptive Strategies: Visual aids (videotape, overhead, instruction signs), computer

Instructional Unit:

Cleaning Battery Connection

Learning Plan

Task No. 1

Performance Task

I. Disconnect Battery Cables

Performance-Based Task Activities

The Student Will:

1. Put on safety glasses
2. Put on shop coat
3. Identify tools
4. Identify the negative battery post
5. Identify the positive post
6. Loosen the clamping
7. Remove negative cable first

Performance-Based Task Check

Instructional Unit:

Cleaning Battery Connections

Learning Plan

Task No. 1

Performance Task

II. Clean Battery Posts and Cables

Performance-Based Task Activities

The Student Will:
1. Use sandpaper to clean posts
2. Use sandpaper to clean cable clamp

Performance-Based Task Check

Instructional Unit:

Cleaning Battery Connections

Learning Plan

Task No. 1

Performance Task

III. Connect Battery Cables

Performance-Based Task Activities

The Student Will:
1. Connect positive battery cable first
2. Tighten positive battery cable
3. Connect negative battery cable
4. Tighten negative cable

Performance-Based Task Check

Instructional Unit:

Cleaning Battery Connections

Learning Plan

Task No. 1

Performance Task

IV. Apply Protective Coating

Performance-Based Task Activities

The Student Will:

1. Apply protective coating to battery posts and cables

Performance-Based Task Check

Instructional Unit:

Cleaning Connections

Supplemental Learning Plan

Task No. 1,2,3, & 4

Performance Task

1. Disconnect Battery Cables
2. Clean Posts and Cable Clamps
3. Connect Battery Cables
4. Paint Battery Posts and Cables

Task Terminology

Battery
Cell
Case
Electrolyte
Caps
Plates
Posts
Positive Post
Negative Post
Cables
Clamps
Safety Galsses
Shop Coat
Battery Cable Puller
Sandpaper
Wrenches
Battery Connection Point
Explosion
Shiny

Essential Math Operation

Read fractions for wrench sizes
Know negative and positive signs

Essential Coordinated Movements and Related Concepts

Precision working
Manipulating
Lifting
Carrying
Standing
Stooping
Reaching
Hand and Wrist coordination
Gripping
Pulling

Related to	
Task #2	1. Brushing your teeth
Task #1 & 3-	2. Screwing and unscrewing a lid on a jar
Task #4	3. Painting a picture

Southeast Polk Sr. High
Auto Mechanics

Vocational Area	Auto Mechanics
Course	Auto 1 - Engine Tune-Up
Instructional Unit	Battery Service
Performance Task	Cleaning Battery Connection
Performance-Based Task Activities	

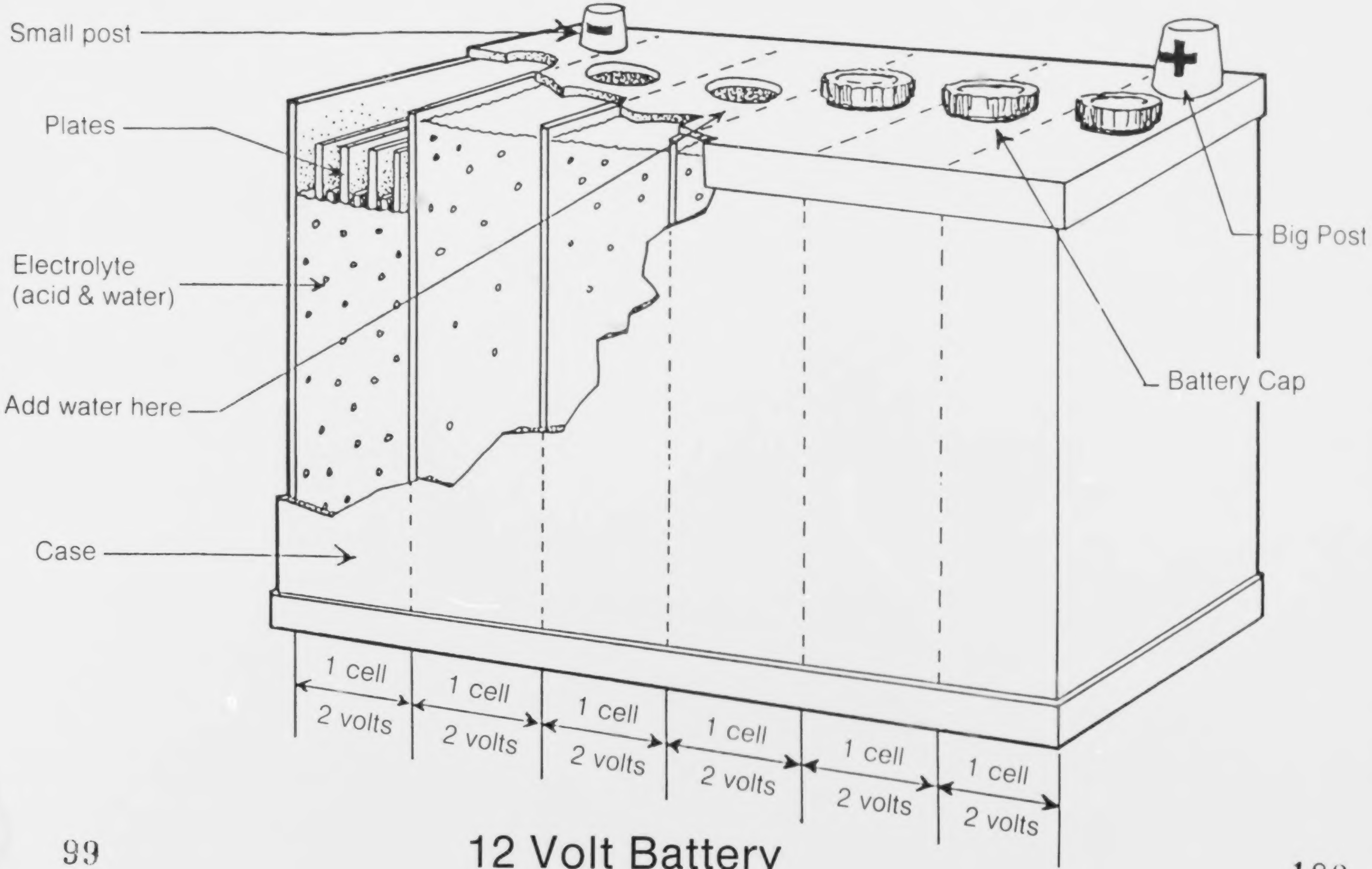
You will:

1. List the safety hazards when working on the automobile battery.
2. Name the parts of the battery.
3. List the tools needed to clean the battery connections.
4. Clean the battery connections.

Words

How to Spell	What it Means
Battery	Produces electrical power to start the engine
Cell	A 2-volt unit used to make an automobile battery
Case	Made from plastic or hard rubber. It is used to hold many cells together
Electrolyte	Made of acid and water
Caps	Found on top of cells. They can be removed to add water
Plates	Made from lead. They attract acid from the electrolyte to make electricity
Posts	Found on top or side of battery. They provide a connection between the battery and the car
Positive Post	The part of the battery that is connected to the solenoid. All U.S. cars since 1956
Negative Post	The part of the battery that is connected to the car body. Sometimes called the ground
Cables	Large wires used to connect the battery to the car
Clamps	Connects the cable to the battery post

The Automotive Battery


Small post
Plates
Electrolyte (acid & water)
Add water here
Case
Big Post
Battery Cap
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts
1 cell
2 volts

12 Volt Battery

You Will Learn

1. What a battery is
2. The parts of the battery
3. The tools needed to care for the battery
4. The dangers of working on a battery
5. To clean battery posts and cables

You Will Be Given

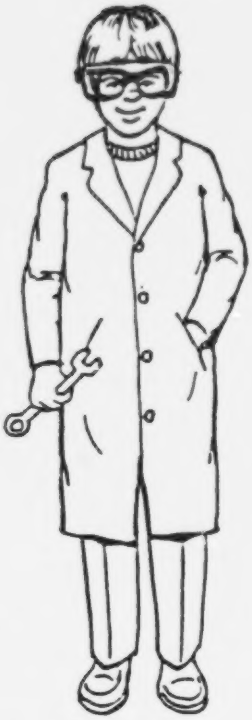
1. Safety glasses
2. Lab coat
3. Battery
4. 2 wrenches
5. Pliers
6. Sandpaper

You Can Do This When

1. You pass the safety tests
2. You know the names of the parts of the battery
3. You have watched the battery videotape

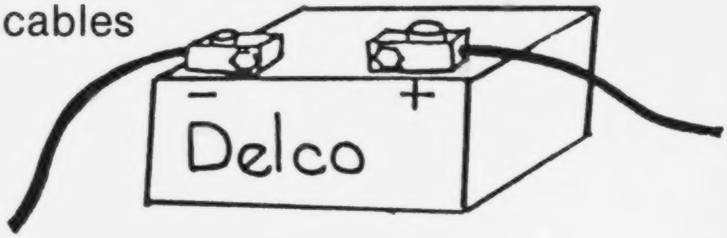
What You Do

1. Put on your safety glasses and shop coat.

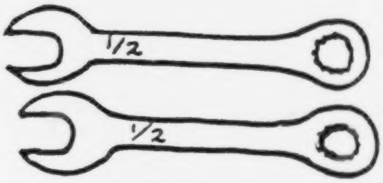


2. Identify the following things found on your work table:

A. Battery with cables



B. Two wrenches



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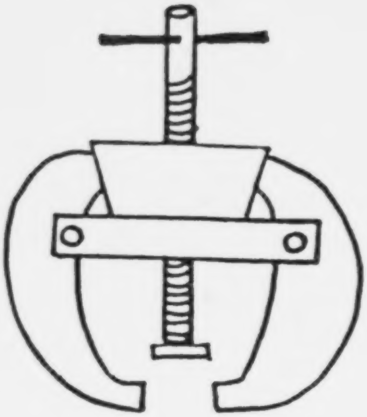
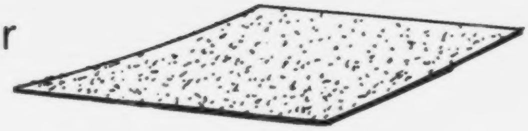
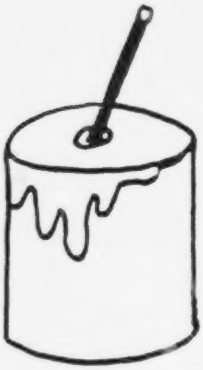
C. Battery cable puller
(for the hard ones)



D. Sandpaper

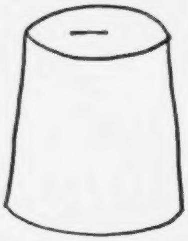


E. Battery Connection Paint



3. Find the negative post on your battery.

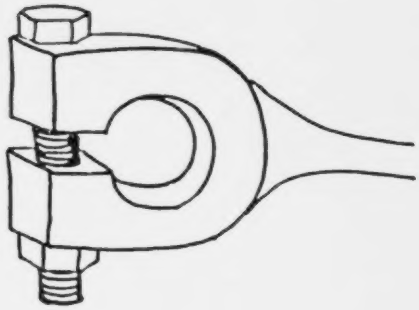
Hints:
- A. " — "
- B. "Neg."
- C. The smaller post



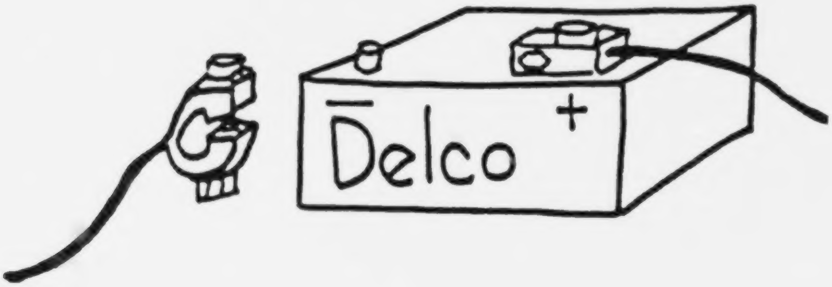
4. Loosen the bolt on the negative clamp using the two wrenches.

> *Caution:* Do not touch the positive post with your wrench. This could cause a spark and an explosion.

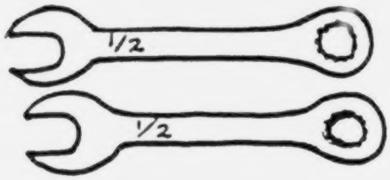
5. Remove the cable from the post.



Your battery should now look like this



6. Now it's safe to loosen the bolt on the positive cable. (Use two wrenches.)

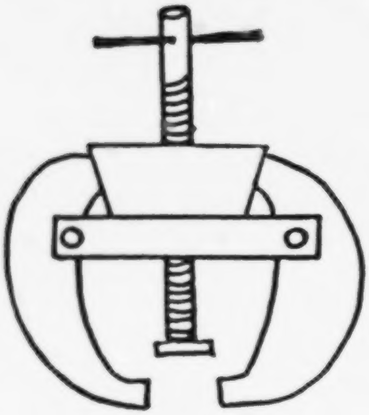


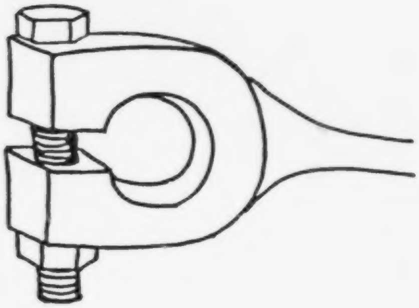
What You Know

I know the negative battery post is the ________ one.
Cable bolts should be loosened using ______ wrenches.
I will remove the ___ battery cable from my battery first.
If I don't understand what I'm doing I will ask my ____ for help.

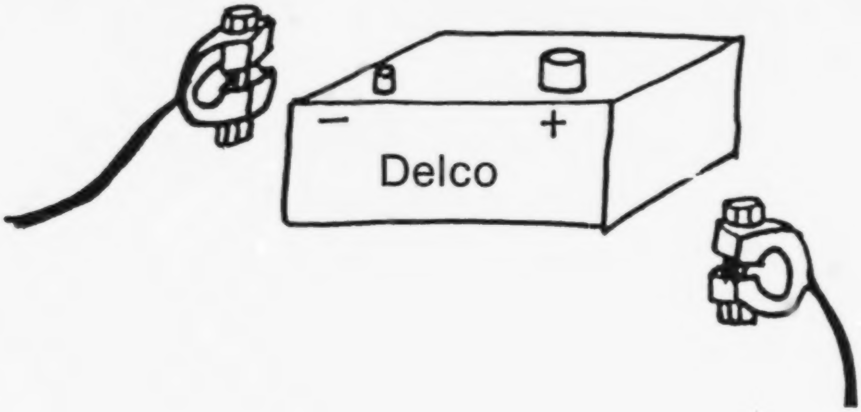
7. Remove the positive cable.

Note: If the cable is stuck have your teacher show you how to use the battery cable puller.



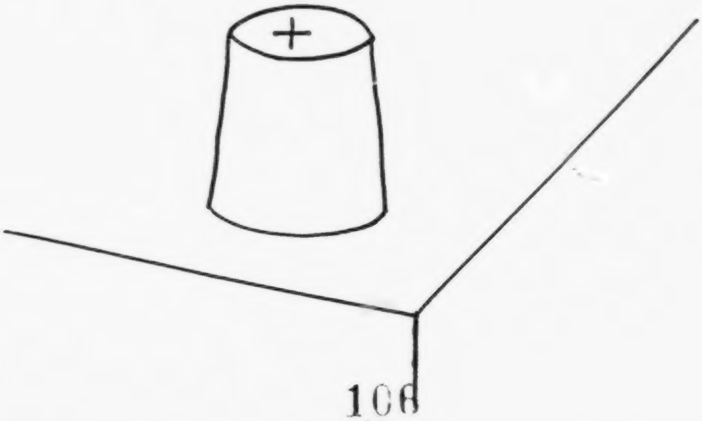


Your battery should now look like this

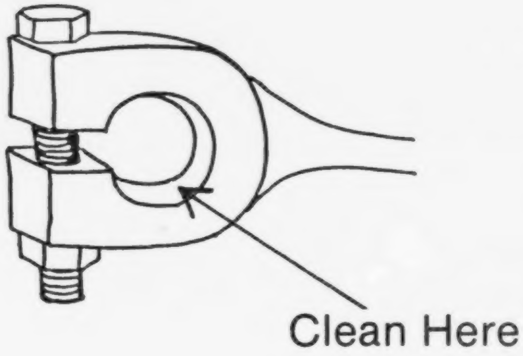


8. It's time to clean the posts.

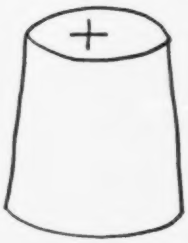
Use your sandpaper to make them shiny like silver.



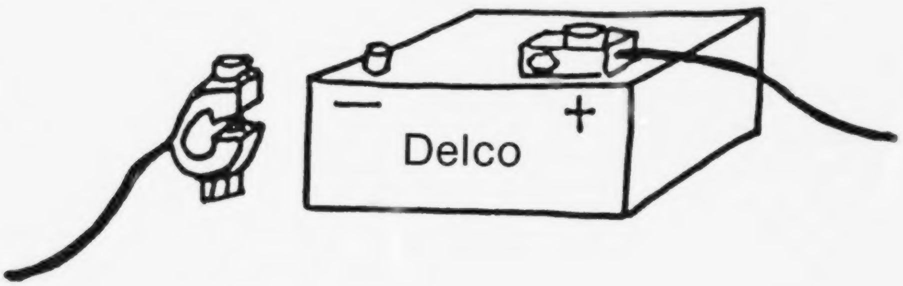
9. Clean the inside of the clamp with your sandpaper. This will be harder to do than cleaning the posts, but just as important.



10. Now we can put the positive cable on the battery post.
Do Not put the negative cable on now.



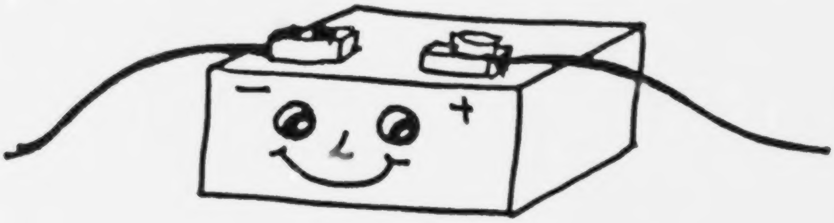
11. Tighten the bolt using two wrenches.
Your battery should now look like this:



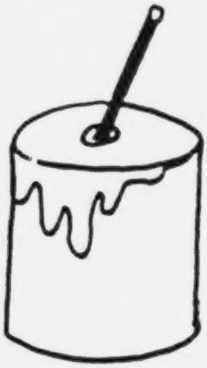
12. Now it's safe to put the negative cable on the negative post.

13. Tighten the cable bolt using two wrenches.

14. Your battery now has clean connections. Thanks to you it will do its job better and last longer.



15. You may paint the posts and cables with the battery connection paint. This will keep your connections clean much longer.



16. You've done a good job, so put your tools away and wash your hands.

What You Know

I use ______________________________ to clean the posts.
A clean post or cable will be ________________ like silver.
I can use a battery cable ______________ to remove the cables that are stuck.
I will use ___________ wrenches to tighten the cable bolt.
I will connect the __________________ battery cable first.
To make the connections stay clean I will apply battery connection ____________________ to the post and cables.

Production Technology
Wood Project #1

Developed By:

Paul T. Nelson
Industrial Technology Department
Harding Transitional School
Des Moines, Iowa

Production Technology

Course Goals

To provide opportunities for students to:
1. Explore basic knowledge, skills and attitudes related to the content elements, structures and processes of industrial production and relationships with other systems and knowledge fields.
2. Develop interest in technology and production systems.
3. Improve inquiry, problem-solving and creative abilities through the study and use of production systems.
4. Develop skills, attitudes and understanding related to safety in production activities.
5. Develop awareness of the environmental and societal implications of industrial production in the past, present and future.
6. Strengthen a positive self concept and facilitate individual fulfillment within the context of social responsibility.
7. Broaden career awareness through exploration of industrial production systems.

Wood Project #1

Long Term Objective:

Given materials, equipment and instruction, the student will perform the hand tool and machine operations required to produce a note holder, meeting the criteria of the instructor.

Short Term Objectives:

1. Given a piece of stock, the student will measure and layout a line to within ± 1/8″.
2. Given properly laid out stock and miter box saw, the student will crosscut the stock at the proper layout line.
3. Given a properly cut piece of stock, the student will measure and layout guidelines for a chamfer to within ± 1/8″.
4. Given properly laid out stock and smooth plane, the student will plane four chamfers within the layout guidelines.
5. Given the wooden base, a pencil and bench rule, the student will locate the center of the base, using the opposite corner method.
6. Given the wooden base with center located, a scratch awl and wooden mallet, the student will punch a small dent at the center, to the satisfaction of the instructor.
7. Given the wooden base with small dent in center and drill press, the student will drill a 1/2 inch diameter hole, to the satisfaction of the instructor.
8. Given a wooden base with a 1/2 inch diameter hole drilled in center, a sanding block and sandpaper, the student will sand the wooden base until acceptable to the instructor.
9. Given a finished sanded wooden base, a 1/2 inch x 6 inch dowel rod, glue, and wooden mallet, the student will assemble and glue the pieces together to the satisfaction of the instructor.
10. Given a wooden clothespin, claw hammer and wire brad, the student will nail the clothespin to the top of the dowel rod to the satisfaction of the instructor.
11. Given an assembled project, brush and varnish, the student will apply two coats of varnish to the project to the satisfaction of the instructor.

Instructional Task Analysis
Wood Project #1

1. The instructor will explain and show appropriate hand tools, machines and supplies.
2. The instructor will explain the term "stock."
3. Measure and layout a line 4" from the end of the stock using a pencil and try square.
4. Clamp stock in miter box saw using a C-clamp.
5. Cut stock on layout line using the miter box saw.
6. Measure and layout 1/4 inch guidelines on top, ends and edges of wooden base using a pencil and try square.
7. The instructor will explain the terms "grain" and "end grain."
8. Indicate direction of planing and grain using arrows.
9. Secure wooden base in vise.
10. Begin planing chamfer on end grain by planing only *half way across.*
11. Plane chamfer to within layout guidelines.
12. Reverse wood in vise.
13. Plane *opposite direction* of end grain to within layout guidelines.
14. Repeat steps 9-13 for planing chamfer of the other end.
15. Plane chamfers on remaining two edges. Since you will be planing with the grain, you may plane all the way across the edge.
16. *STOP* - Have your instructor inspect your chamfers.
17. Locate and mark with a pencil the center of the wooden base by lining up the opposite corners with a bench rule.
18. Using a scratch awl and wooden mallet, punch a small dent where the two pencil lines cross each other.
19. Place wooden base into drilling jig on drill press.
20. Check to make sure drill bit is lined up with center of wooden base.
21. Turn on drill press and carefully drill hole.
22. Turn off drill press.
23. Obtain sandpaper from your instructor.
24. Secure wooden base in vise.
25. Begin sanding the edge of the wooden base using 80 grit sandpaper and a sanding block.
26. Sand remaining edges and ends with 80 grit sandpaper.
27. Sand top of wooden base with 80 grit sandpaper. *Sand with the grain.*
28. Repeat steps 24-27 using 220 grit sandpaper.
29. *STOP* - Have your instructor inspect your sanding.
30. Obtain glue, wooden mallet, wet rag and one 1/2"x6" dowel rod from your instructor.
31. Place a little glue on the end of the dowel rod and lightly pound the dowel rod into the hole of the wooden base.
32. Wipe off excess glue with a wet rag.
33. Obtain a clothespin, wire brad and claw hammer.
34. Disassemble clothespin.
35. Nail wire brad into one side of clothespin.
36. Place clothespin on top of dowel rod and finish nailing wire brad until secure.
37. Put clothespin together.
38. Make a final inspection.
39. Apply first coat of varnish and let dry overnight.
40. Lightly sand with 220 grit sandpaper
41. Clean with a tack rag.
42. Apply second coat of varnish and let dry overnight.
43. Polish with lemon oil or furniture polish.
44. Check with instructor for final evaluation.

Wood Project #1

List of Tools and Machines:

- Pencil
- Try square
- Bench rule
- Miter box saw
- C-clamp
- Smooth plane
- Vise
- Scratch awl
- Wooden mallet
- Twist drill bit (1/2" diameter)
- Drill press
- Claw hammer
- Paint brush
- Sanding block

List of Materials:

- Finished drawing
- Wooden base - 3/4"x4"x4" Mahogany
- Dowel rod - 1/2"x6"
- Clothespin
- Sandpaper - 80 and 220 grit
- Titebond glue
- Wire brad
- Polyurethane varnish - Deft

Course: Production Technology
Grade: 6

Name: Paul T. Nelson
Date:

Learning Plan

Instructional Objective:
Given materials, equipment and instruction, the student will perform the hand tool and machine operations required to produce a note holder, meeting the criteria of the instructor.

Instructional Unit:
Wood Project #1

Safety Considerations:

1. Safety glasses or goggles provided for all students.
2. Review classroom safety rules.
3. Review safety rules for hand tools.
4. Review safety rules for miter box saw.
5. Review safety rules for drill press.

Instructional Steps:

1. Explain the term "stock."
2. Explain the use of the try square.
3. Demonstrate how to measure and layout a line on stock.
4. Explain the use of the miter box saw.
5. Demonstrate how to crosscut the stock at the layout line.
6. Demonstrate how to measure and layout guidelines for chamfers.
7. Explain the terms "grain" and "end grain."
8. Explain the use of the smooth plane.
9. Demonstrate how to plane the chamfers of end grain and edge grain.
10. Demonstrate how to locate and mark the center of the wooden base using the opposite corner method.
11. Explain the safety rules for the drill press.
12. Demonstrate how to drill the hole in the wooden base.
13. Explain the difference between 80 and 220 grit sandpaper.
14. Demonstrate proper sanding techniques using a sanding block.
15. Demonstrate how to assemble project using glue and wire brad.
16. Demonstrate how to apply a varnish finish.

Evaluation Technique:

1. Skill assessment evaluation of note holder project.
2. An objective note holder project test.

Adaptive Strategies:

1. Classroom operating as a cooperative group with peers helping each other through the project.
2. Preferential seating for the visual or hearing impaired.
3. If a student couldn't read the bench rule or try square, a template can be used so stock could be measured correctly.
4. Use the drill press jig for wood project #1.

Needed Changes:

Course: Production Technology
Grade: 6

Name
Date

Supplemental Learning Plan

Instructional Unit:
Wood Project #1

Performance Task:
Produce a Note Holder Project

Task Terminology:
Pencil
Try square
Bench rule
Miter box saw
C - clamp
Smooth plane
Vise
Scratch awl
Wooden mallet
Twist drill bit
Claw hammer
Paint brush
Grain
End grain
Dowel rod
Clothespin
Sandpaper
Glue
Wire brad
Varnish
Sanding block

Essential Math Operations:
Measuring
Fractions

Essential Coordinated Movements:
Precision working
Manipulating
Handling
Walking
Balancing
Standing
Turning
Bending
Stooping
Reaching
Pushing
Pulling
Lifting
Carrying

Related Concepts:

1. Drawing straight lines
2. Painting a wall
3. Planing a door

Wood Project #1

Entry Level Skills:

1. Student must have full control of upper body movements such as fingers, hands and arms.

Name: ______________________ Per: ______________________

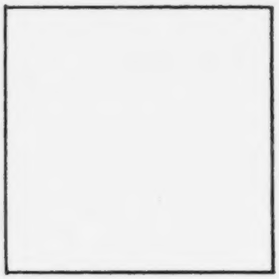
Wood Project #1

Curriculum Assessment of Present Levels of Performance:

1. Write your first name, last name and period number in the blanks provided.

First ____________________ Last ____________________ Period ______

2. Using a bench rule, find the center of the square below.



3. Using a bench rule, measure each line below and write your answer on the line.

4. Write the name of the tool as the instructor holds it up.

A. E.
B. F.
C. G.
D. H.

Choices: Scratch awl, Claw hammer, Wooden mallet, Smooth plane, Bench rule, Miter box saw, Sanding block, Try square.

5. Your instructor will now have you perform some manual tasks.

Student Module

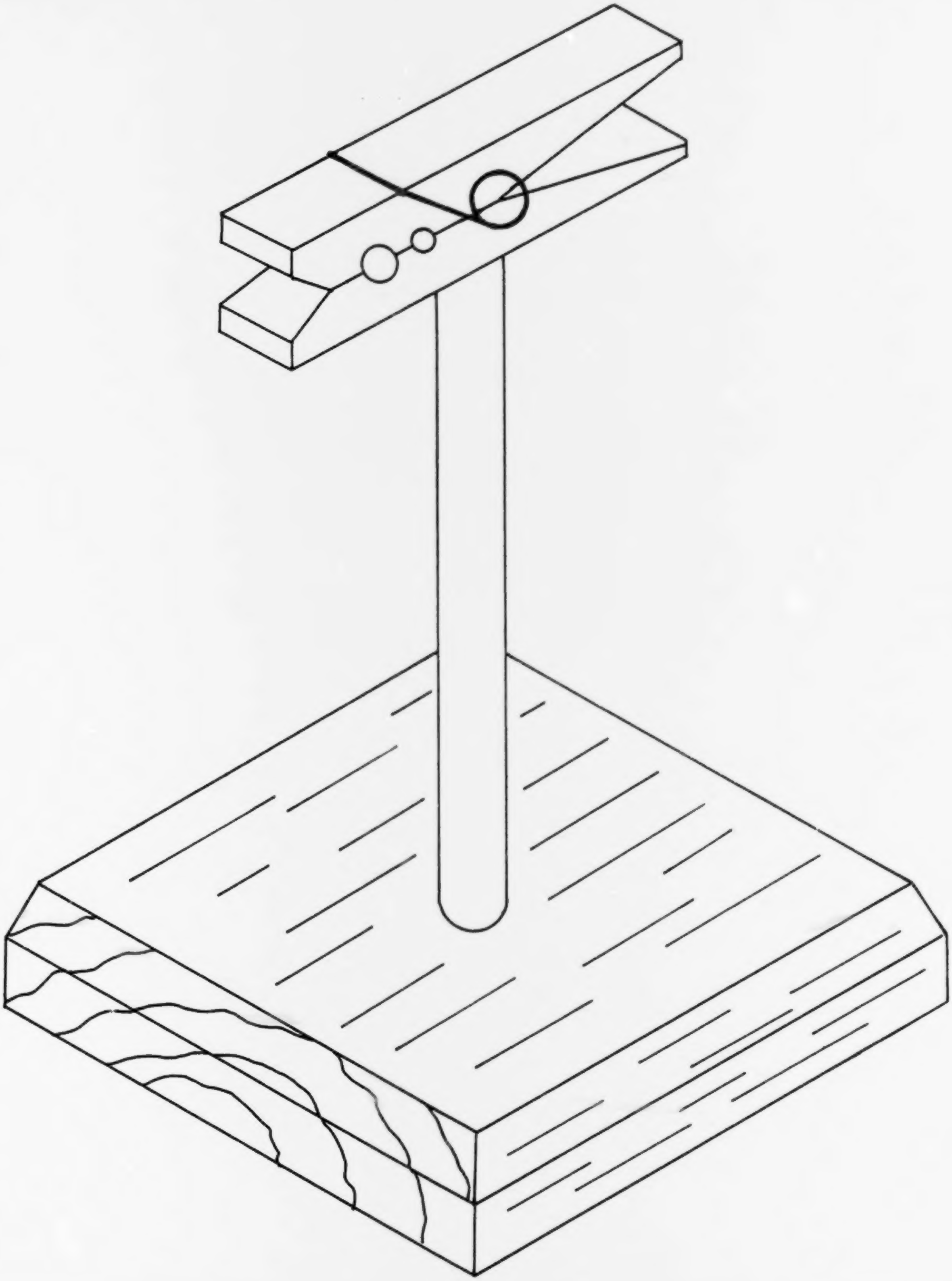
Vocational Area:
Trade and Industrial Education

Program:
Production Technology

Occupation:
Production Worker

Instructional Unit:
Wood Project #1

Performance Task:
Producing a Note Holder Project



Scale-Full	Note Holder	P. Nelson

Words

How To Spell	What It Means
Pencil	A writing or drawing tool
Try square	A tool used for measuring and checking wood for squareness
Bench rule	A measuring tool similar to a ruler
Miter box saw	A saw used for cutting various angles
C - clamp	A clamping tool shaped like the letter "C"
Smooth plane	A tool used for shaping the edges and ends of a piece of wood
Vise	A device used for holding wood
Scratch awl	A tool with a sharp pointed end
Wooden mallet	A tool used for light pounding
Twist drill bit	A bit with two spiral grooves extending along its length
Drill press	A machine used for drilling holes
Claw hammer	A tool used for pounding or pulling nails
Paint brush	A tool used for applying paint or varnish
Grain	The arrangement of cells or wood fibers in wood
End grain	The tips or cut-off ends of the wood fibers
Dowel rod	A long cylindrical piece of wood
Clothespin	A small wooden device used to hang up clothes
Sandpaper	A gritty, textured piece of paper
Glue	A creamy-like substance used to fasten wood
Wire brad	A very small nail
Varnish	A type of wood finish
Sanding block	A tool used for sanding wood

Performance-Based Task Activities

You Will:

1. Produce a note holder

You Will Learn To:

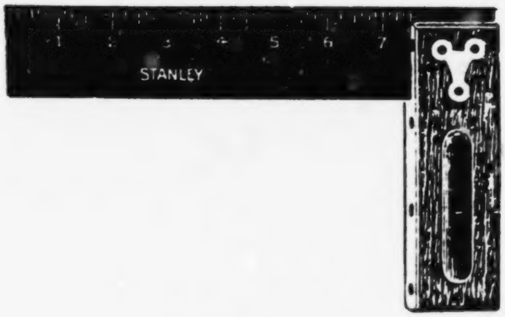
1. Measure and layout stock
2. Use a plane to make a chamfer
3. Use a drill press to drill a hole
4. Sand a piece of wood
5. Assemble wood with glue and wire brads
6. Apply a varnish finish

You Will Be Given:

Try square
Bench rule
Miter box saw
C - clamp
Smooth plane
Vise
Scratch awl
Wooden mallet
Twist drill bit
Drill press
Claw hammer
Paint brush
Sanding block
Finished drawing
3/4" Mahogany stock
1/2"x6" Dowel rod
Clothespin
Sandpaper (80 and 220)
Titebond glue
Wire brad
Varnish

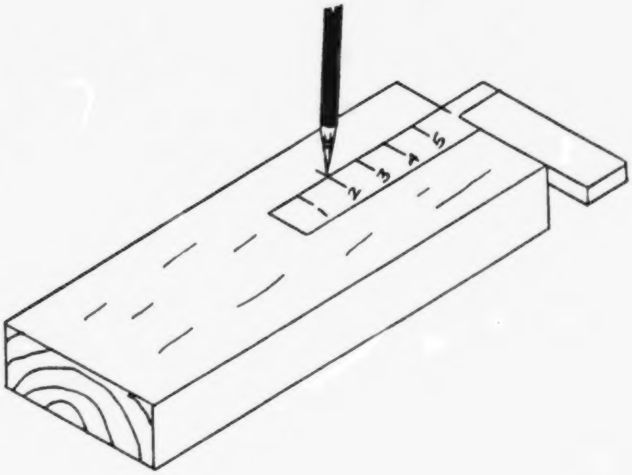
What You Do:

Here is a picture of a try square.

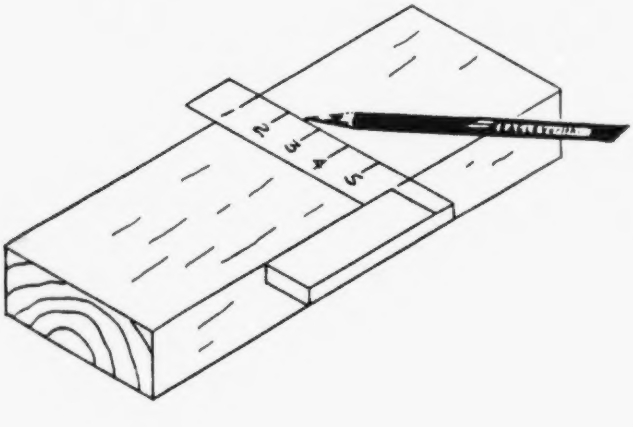


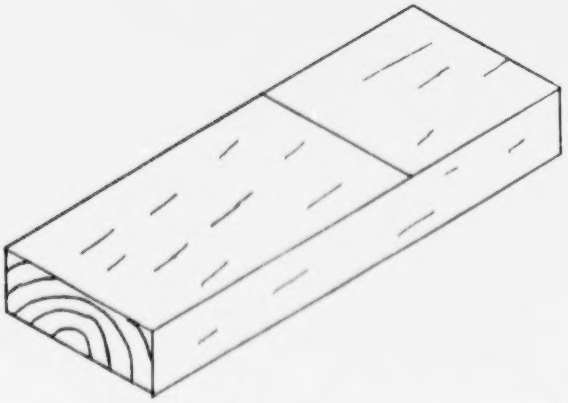
The try square is used to measure and layout lines on stock.

1. Measure in 4" from the end of a piece of stock and mark with a pencil.



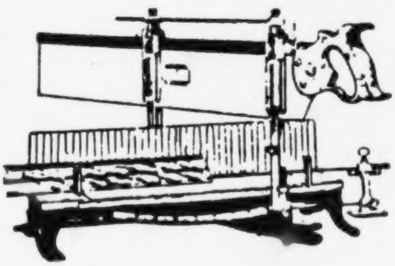
2. Draw a line across the board while lining up the pencil mark with your try square.



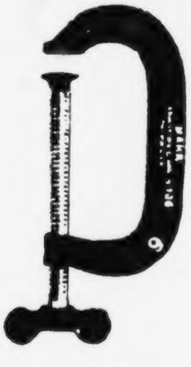


Stock, with a pencil drawn across 4" from the end.

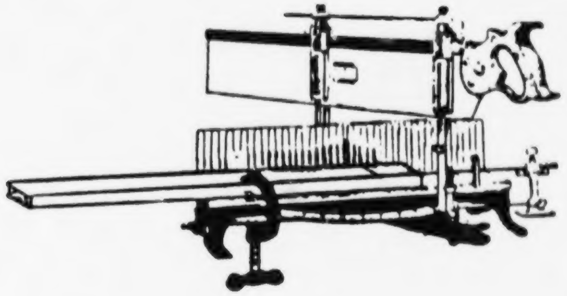
This is a miter box saw and a C - clamp



Miter box saw



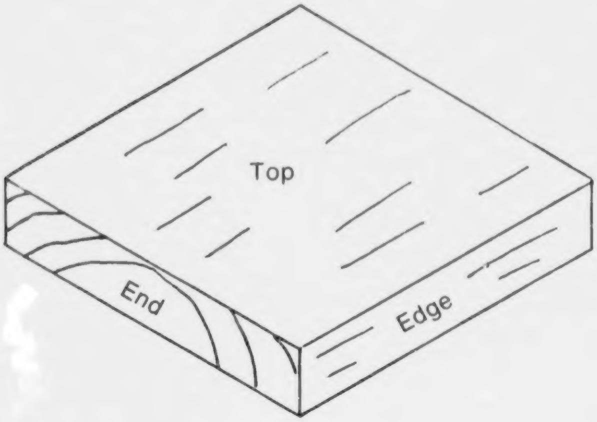
C - clamp



3. Clamp stock in miter box saw using a C - clamp.

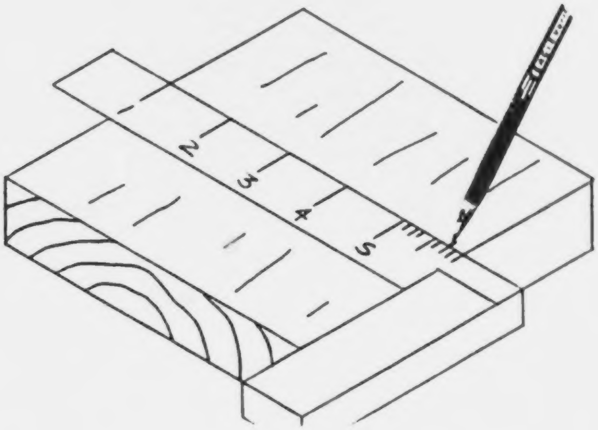
4. Saw the stock on the pencil line using the miter box saw.

This is your wooden base.

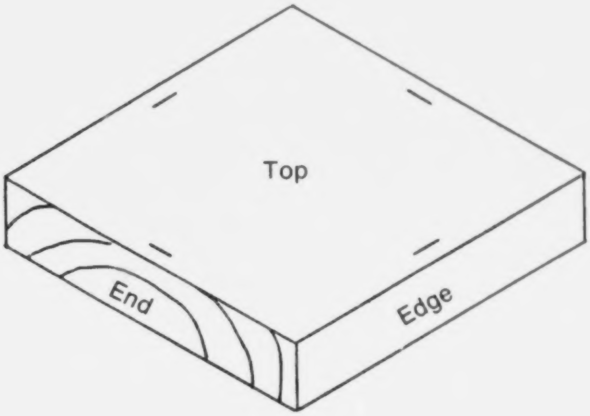

Top
End
Edge

5. Write your name on the bottom of your wooden base.

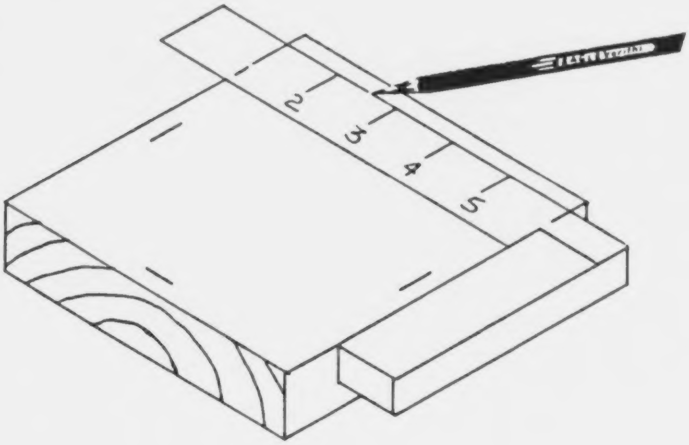
6. Measure in 1/4" from each end and edge on top of your wooden base and mark with a pencil.



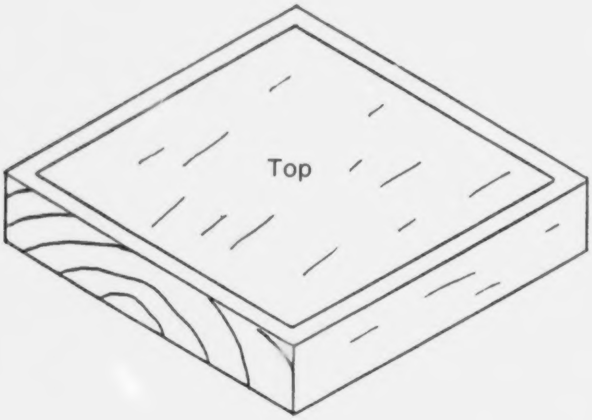
Wooden base with pencil marks 1/4" in from each edge and end on top.


Top
End
Edge

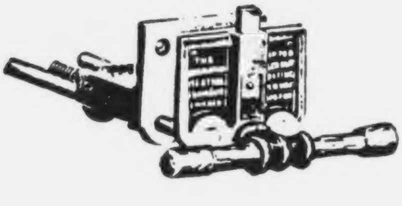
7. Draw pencil lines through each 1/4" mark using the try square.



Wooden base with pencil lines drawn on top.



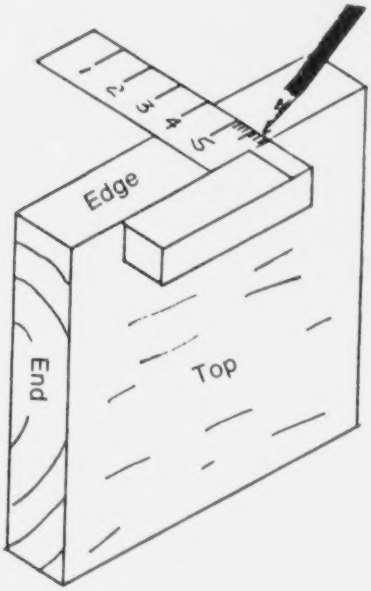
This is a woodworking vise.



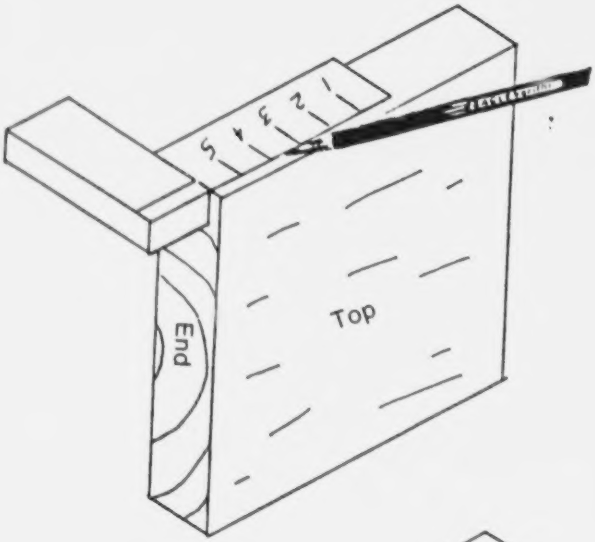
You should secure the wooden base in the vise during the next two steps.

(7-8)

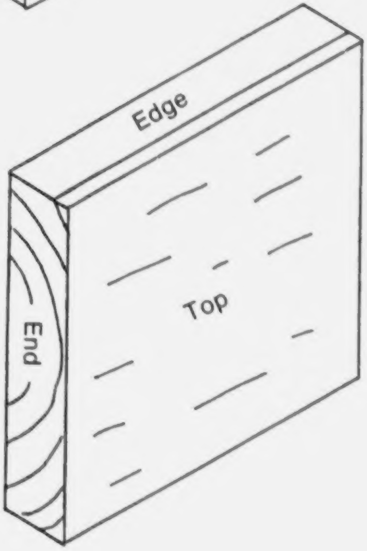
8. Measure down 1/4" from the top of one edge of your wooden base and mark with a pencil.


1
2
3
4
5
Edge
End
Top

9. Draw a pencil line through the 1/4" mark using the try square.

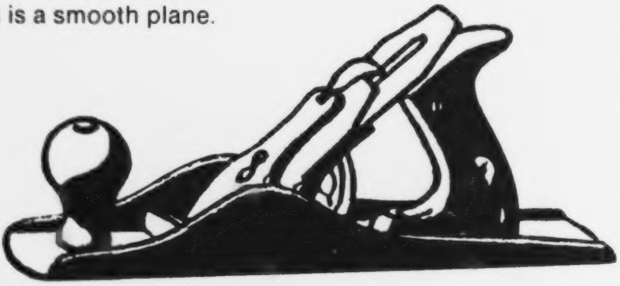

1
2
3
4
5
End
Top

Wooden base with pencil line drawn across the edge.


Edge
End
Top

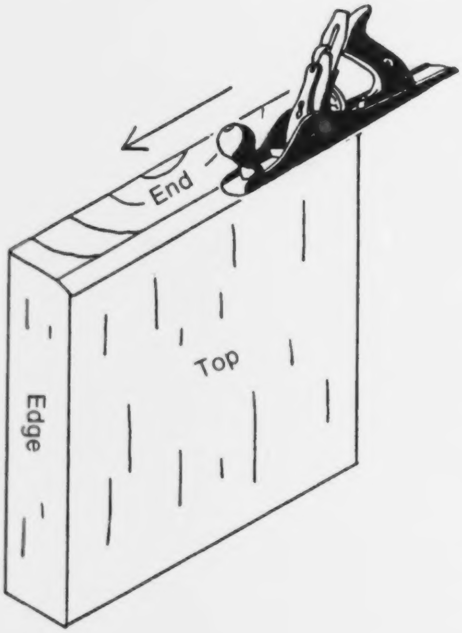
Repeat steps 7 and 8 for the other edge and both ends.

This is a smooth plane.

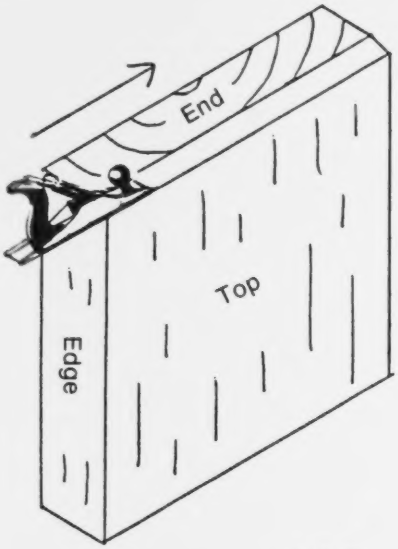


A smooth plane is used for shaping the edges and ends of stock.

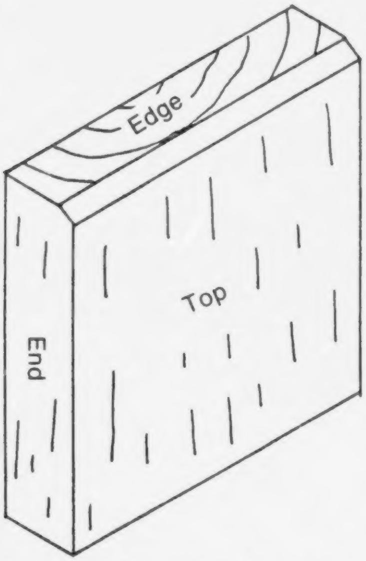
10. Secure the wooden base in your vise and begin planing a chamfer on one end.



When planing end grain, plane only half way across. Reverse and plane opposite direction until chamfer is completed. Plane the chamfer within the pencil lines.

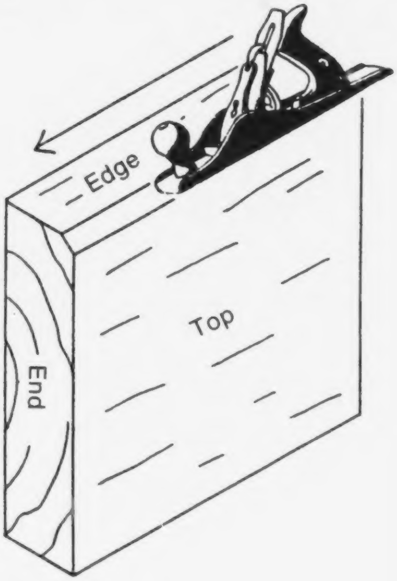


This is the wooden base with a chamfer completed on one end.



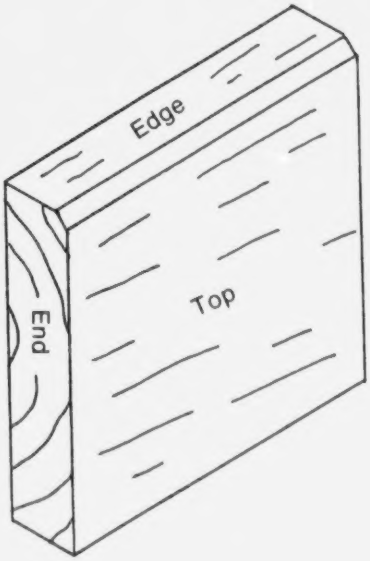
11. Repeat Step 10 for the other end.

12. Secure the wooden base in your vise and begin planing a chamfer on one edge.



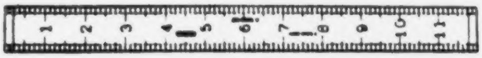
When planing edge grain, you may plane all the way across in one direction. Plane the chamfer within the pencil lines.

This is the wooden base with a chamfer completed on one edge.



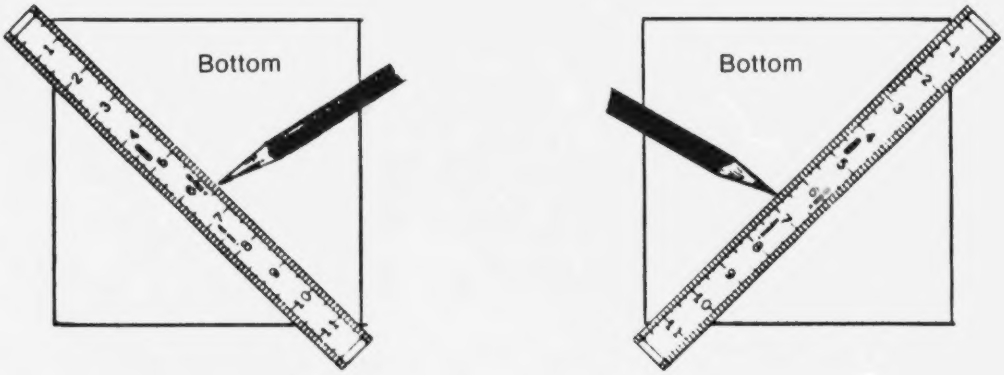
13. Repeat Step 12 for the other edge.

14. *STOP*. Check with your instructor to see if all chamfers are made correctly.

This is a bench rule 

A bench rule is a measuring tool.

15. Line up the opposite corners on the bottom of the wooden base with a bench rule. Draw pencil lines from corner to corner.



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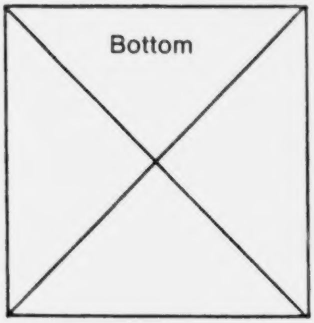
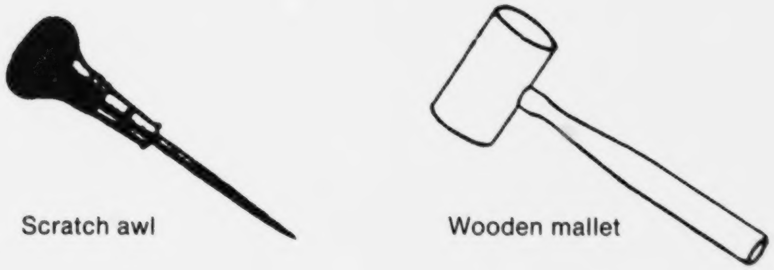
Wooden base with pencil lines drawn from corner to corner on bottom.

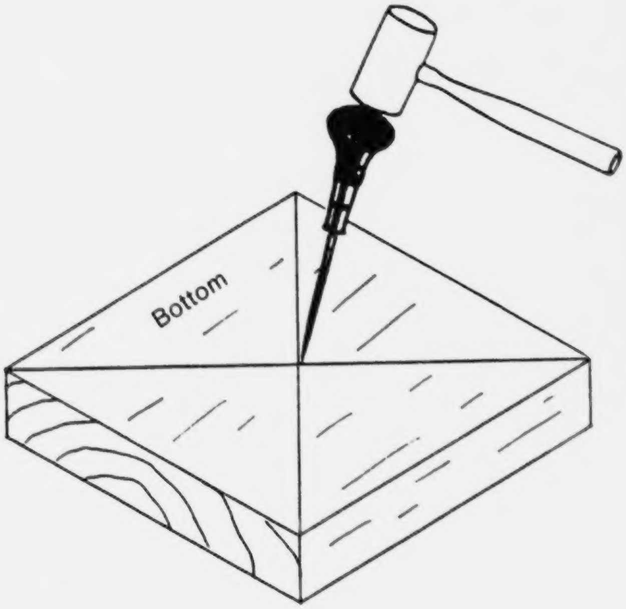


This is a scratch awl and wooden mallet.

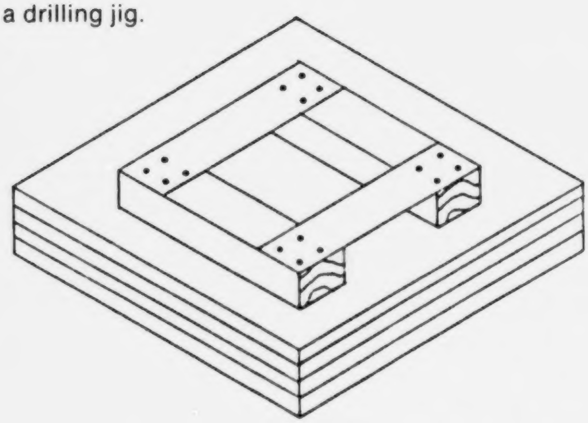

Scratch awl

Wooden mallet

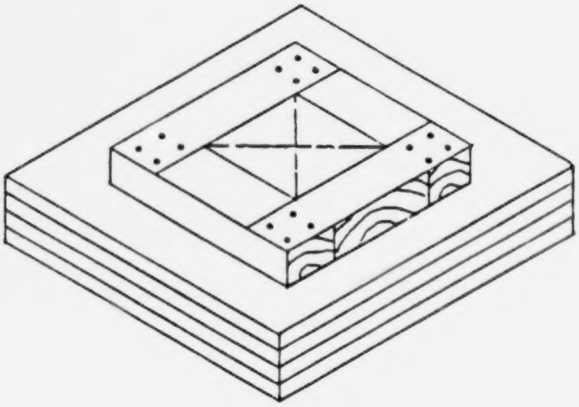
16. Punch a small dent on the bottom of the wooden base where the two pencil lines cross each other.

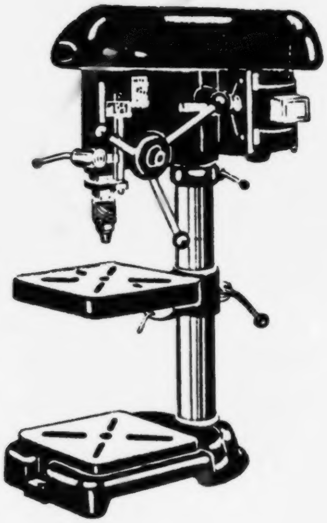


This is a drilling jig.



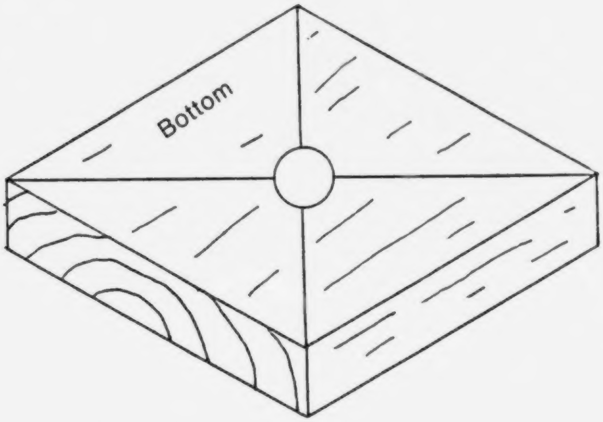
17. Slide the wooden base, upside down, into the drilling jig.



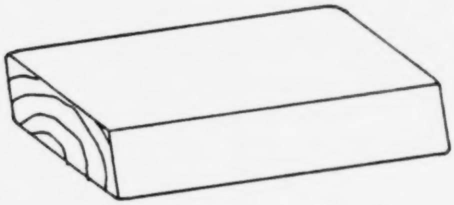


This is a drill press.

18. With the drilling jig fastened onto the drill press table, turn on drill press, and carefully drill a hole into the wooden base.



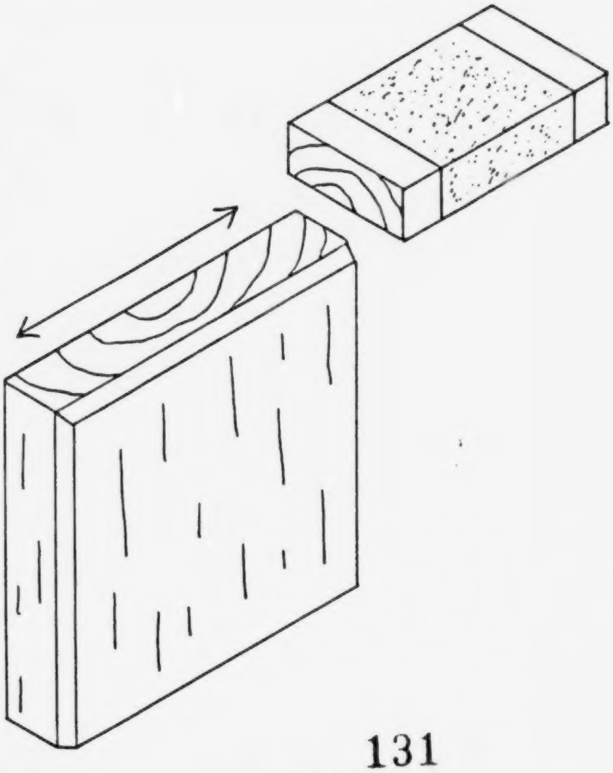
Wooden base with hole drilled in center.



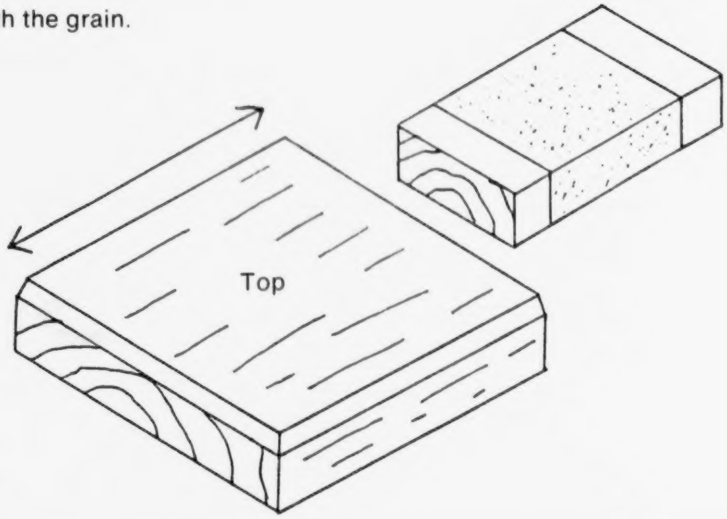
This is a sanding block.

Fasten a piece of 80 grit sandpaper around the sanding block.

19. Secure the wooden base into the vise. Begin sanding both ends, both edges, and all chamfers.



20. Sand top, with the grain.

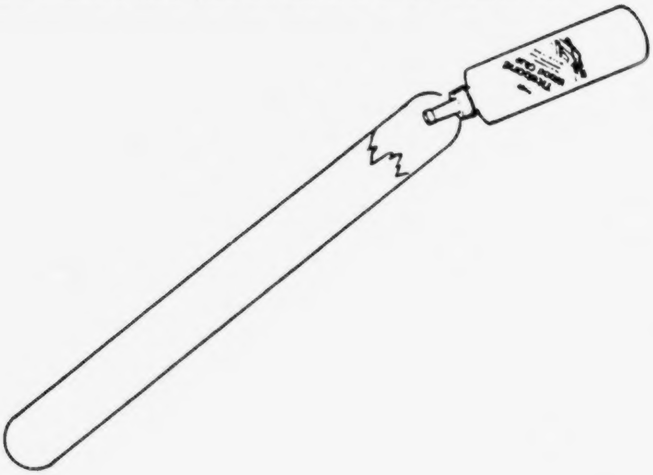


21. Fasten a piece of 220 grit sandpaper around the sanding block and repeat Steps 19 and 20.

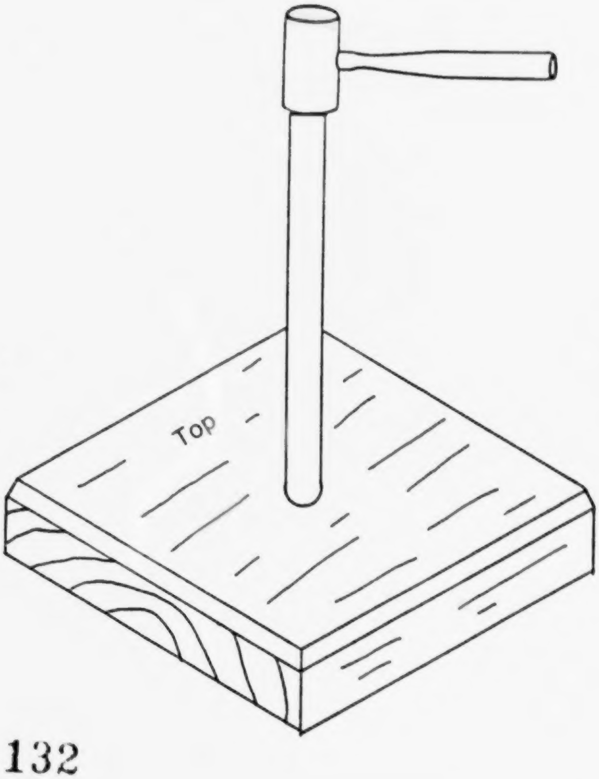
22. *STOP*. Have your instructor check your sanding.

23. Obtain glue, wooden mallet, wet rag and one 1/2"x6" dowel rod from your instructor.

24. Place a little glue on the end of the dowel rod.

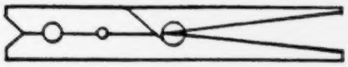


25. Lightly pound the dowel rod into hole on top of the wooden base.

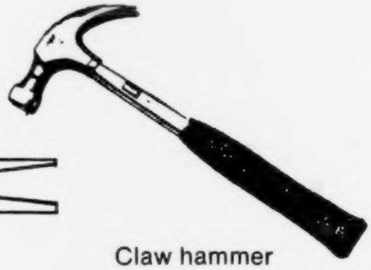


26. Wipe off excess glue with wet rag.

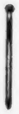
This is a clothespin, claw hammer, and wire brad.



Clothespin

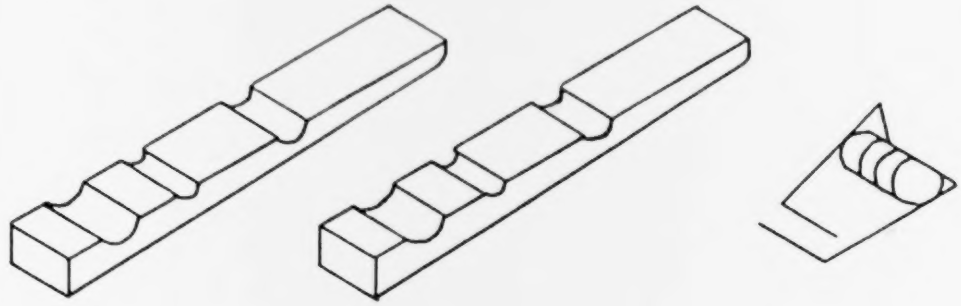


Claw hammer

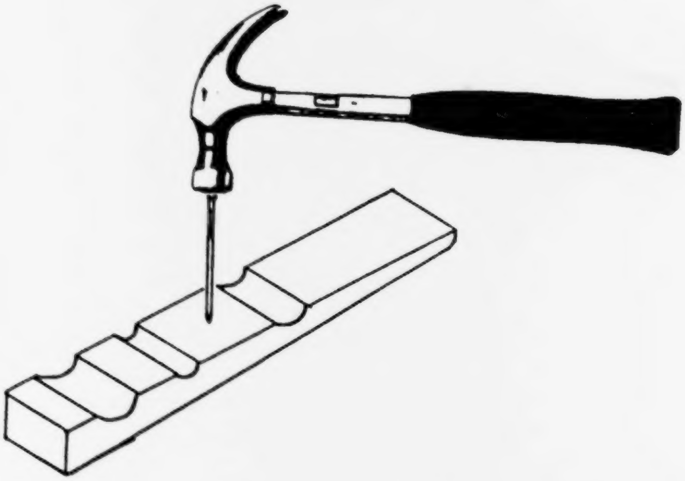


Wire brad

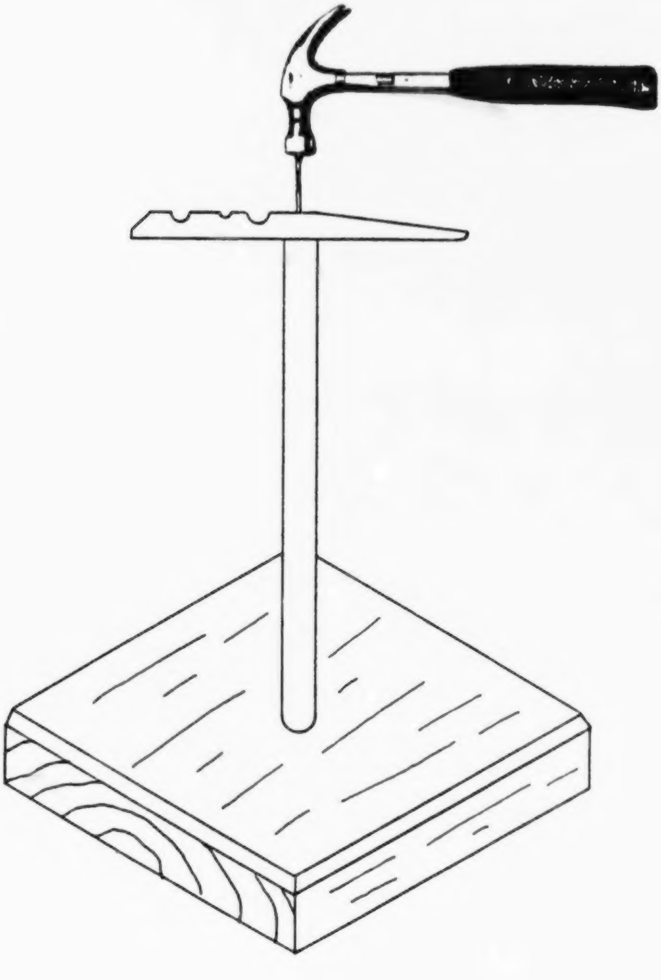
27. Disassemble the clothespin.



28. Nail the wire brad into one side of the clothespin.



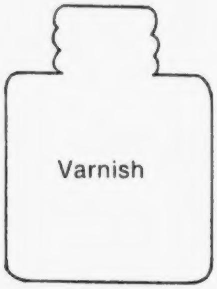
29. Place clothespin on top of the dowel rod and finish nailing the wire brad until secure.



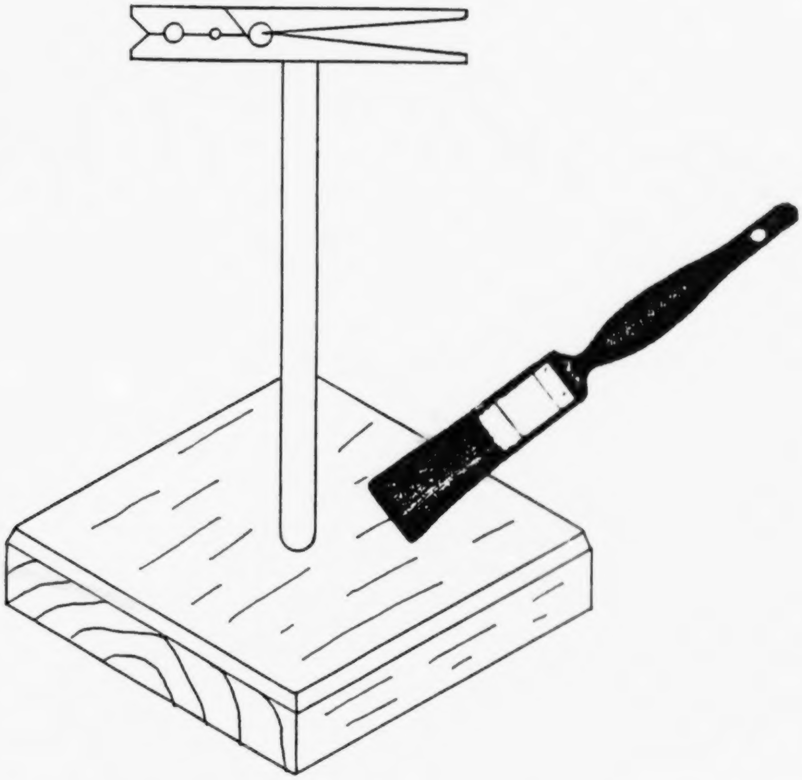
30. Assemble the clothespin together and make a final inspection.

This is a paint brush and a jar of varnish.

Paint brush



31. Apply the first coat of varnish brushing with the grain. Do not varnish the clothespin. Let dry overnight.



32. Lightly sand the Note Holder with 220 grit sandpaper and clean with a tack rag.

33. Apply the second coat of varnish and let dry overnight.

34. Polish the Note Holder with lemon oil or furniture polish.

35. Check with your instructor for final evaluation.

Name: Period:

Wood Project #1
Skill Assessment Evaluation

Measuring and Layout:

____Excellent - All measurements within tolerances
____Above Average - One measurement out of tolerance
____Fair - Two measurements out of tolerance
____Below Average - Three measurements out of tolerance
____Poor - More than three measurements out of tolerance

Assembly:

____Excellent - Clothespin, dowel rod and wooden base assembled neatly and correctly
____Above Average - One of the above not correct
____Fair - Two of the above not correct
____Below Average - Three of the above not correct
____Poor - No consideration shown

Gluing:

____Excellent - No glue marks visible
____Above Average - 1 small glue mark visible
____Fair - 1 or 2 small glue marks visible
____Below Average - 2 or 3 small glue marks visible
____Poor - More than 3 glue marks visible

Sanding:

____Excellent - No sanding marks visible
____Above Average - 1 small fine mark visible
____Fair - 1 or 2 small fine marks visible
____Below Average - 2 or 3 small fine marks visible
____Poor - Many marks of coarse sandpaper visible

Finish:

____Excellent - No drips or runs and complete coverage of project
____Above Average - 1 drip or run
____Fair - 1 or 2 drips and runs
____Below Average - 2 or 3 drips and runs
____Poor - Many drips and runs and imcomplete coverage

Points:	**Grades:**
5 - Excellent	22-25 - A
4 - Above Average	18-21 - B
3 - Fair	14-17 - C
2 - Below Average	10-13 - D
1 - Poor	0-9 - F

Total Points:

Grade:

What You Have Learned:

Name: Period:

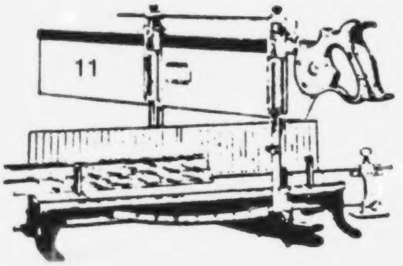
Note Holder Test

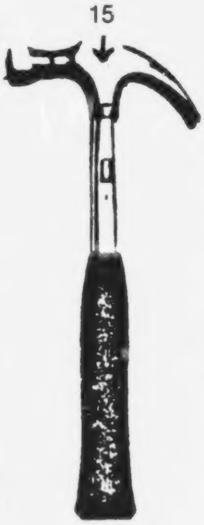
True or False:

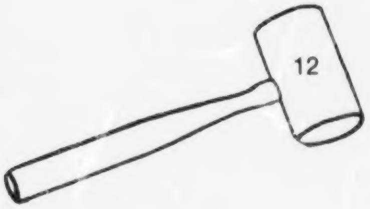
1. ________ A try square is a tool used for measuring and checking wood for squareness.
2. ________ A chamfer is a woodworking tool.
3. ________ When planing end grain, plane only half way across the end.
4. ________ Safety goggles should be worn when drilling holes on the drill press.
5. ________ Always begin sanding with extra fine sandpaper.
6. ________ Always sand with the grain.
7. ________ A scratch awl is a tool for holding wood.
8. ________ A wooden mallet is used to pound nails into wood.
9. ________ Wipe off excess glue with a wet rag.
10. ________ After applying the 1st coat of varnish, you should let your project dry overnight.

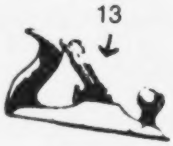
Identify the Tools:

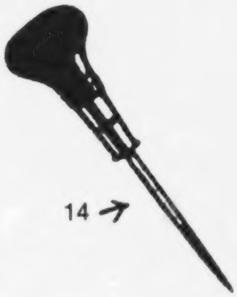
11. ______________________
12. ______________________
13. ______________________
14. ______________________
15. ______________________



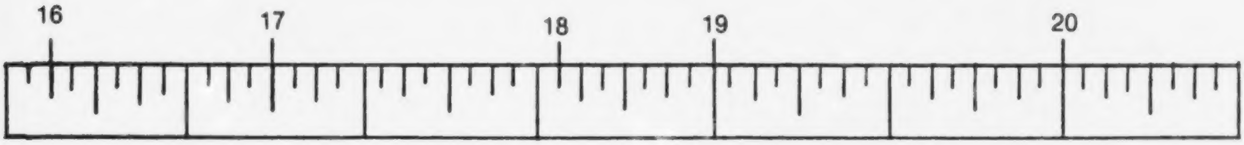








What are the measurements shown on the bench rule?



16. ________
17. ________
18. ________
19. ________
20. ________

MGM

Curriculum Project

Long Term Goal/Performance Objective:

Given materials, handouts, demonstrations and instructions the student will complete assigned tasks in manufacturing a tool box.

Short Term Objective(s)/Behavioral Objective(s):

	Conditions	Behavior	Criteria
1.	Given a word list of tools to be used describe its function	student will read each verbally.	80% or 8/10
2.	Presented with prior knowledge of measuring 1", 1/2", 1/4" and a computer	student will identify fractional measurement presented on the screen.	90% or 9/10
3.	Given sheet metal and necessary tools	student will demonstrate the necessary skills to layout and form the sheet metal part of the tote.	to teacher satisfaction
4.	Given wooden piece and necessary tools	student will demonstrate the skills necessary to construct the wooden ends.	to teacher satisfaction
5.	Given all completed parts and proper instruction and tools	student will demonstrate the knowledge and skills to assemble the tool-tote .	to teacher satisfaction

Prerequisite Skills/Entry Level Skills

1. Student must be able to measure to the whole inch, 1/2" and 1/4".
2. Student must demonstrate ability to attend to task for 30 minutes.
3. Student must be able to listen to and understand verbal directions for one- and two-step operations.
4. Student must demonstrate the ability to physically handle assigned task, (when placed by teacher after consideration of physical ability).

Material/Resources/Tools Required:

Aviation snips
Awl
Band saw
Belt sander
Box and Pan Brake
Claw hammer
Disc Sander
Drill Press
File
Jig
Miter Gauge
Nails
Nail set
Power drill
Portable power drill
Power Sander
Sanding Block
Steel Rule
Straight Snips
Computer and Disks
Field Trip

Field Trip Objective

Given time off from school and transportation to the factory, the students will become aware of how industry produces a product by means of an assembly line and become aware of safety precautions used for various types of jobs, as evidenced by verbally telling the teacher what they saw and discuss as a group what various safety features they were able to see.

The field trip to Waterloo Industries on April 11 was a great success. The company was very cooperative and informative in its explanation of the jobs and how the company was run.

The students appeared very interested and highly motivated by this adventure. They were able to discuss at great length and detail the different things we saw, especially the safety measures used by some of the workers on different machines.

Dear parents,

We are planning a field trip to Waterloo Industries for an Industrial Arts project. We are going to go on April 11, 1984. We will drive the students in our own cars, leave at 12:45 and return by 2:30. Please sign and return this form if you give your child permission to go.

Ms. Theobald
Mr. Needham
Ms. Fish

Career Education Objective

Given pamphlets on various careers, the students will demonstrate an interest in and knowledge of jobs in the area of "Building Trades and Construction," as evidenced by choosing two jobs they feel they would like to do and briefly describing each.

The students were given the 12 pamphlets to read and were questioned on certain aspects of each job. The pamphlets covered information on what you would be required to do on the job, how long you would work each week, the time of the year you would most likely work and the amount of money you could make. It offered ideas for classes to take in school, told if additional education was necessary, and where you could find a job.

The job pamphlets were taken from "Job Box" Pacemaker Vocational Resource Module, Feron*Pitman Publishers, California, 1978. These are the jobs we explored:

1. Carpenter's Helper
2. Plumber's Helper
3. Glazer's Helper
4. Plasterer's Helper
5. Dry Wall Worker
6. Assistant Electrician
7. Insulating Worker
8. Bricklayer
9. Heavy Equipment Operator
10. Cement Mason's Helper
11. Roofing Worker
12. Painter's Helper

Course: Industrial Arts
Grade: M.D.

Name: Gary Needham
Date: 3/5/84

Instructional Task Analysis

Instructional Objective:
Students will demonstrate the skills necessary to construct the wooden ends of the tool-tote

Instructional Unit: Wood Ends

Instructional Tasks (what student does):

Steps	Possible Hazard	Method of Prevention
Drill hole for handle	Eye/Hand Injury	Eye protection. Both hands occupied while drilling
Layout diagonal line	None	
Cut diagonal line on band saw	Eye/Hand Injury	Eye protection. 3" safety for band saw
True diagional cuts on belt sander	Eye/Hand Injury	Eye protection. Both stock
Hand sanding	Eye Injury	Eye protection
Finish with oil	Eye Injury	Eye protection

Course: Industrial Arts	Name: Gary Needham
Grade: M.D.	Date: 3/5/84

Instructional Task Analysis

Instructional Objective(s): Students will demonstrate the skills to layout and form the sheet metal part of the tool-tote

Instructional Unit: Form sheet metal sides and bottom

Instructional Tasks (what student does):

Steps	**Possible Hazard**	**Method of Prevention**
Layout sheet metal	Hand	Care in handling
Center punch and drill relief holes	Eye/Hand	Eye protection. Both hands on power drill
Cut band saw	Eye/Hand	Eye protection. Care in handling
Cut	Eye/Hand	Eye protection. Care in handling
Form hems	Hand	Care in handling
Center punch and drill fastener holes	Eye/Hand	Eye protection. Both hands occupied on drill press. Care in handling
Fold sides	Hand	Care in handling

Course: Industrial Arts
Grade: M.D.

Name: Gary Needham
Date: 3/5/84

Instructional Task Analysis

Instructional Objective(s): Students will demonstrate the knowledge and skills necessary to assemble the tool-tote

Instructional Unit: Assembly

Instructional Tasks (what student does):

Steps	**Possible Hazard**	**Method of Prevention**
Nail sides and bottom to the ends	Hand	Care in handling
Layout, handle	None	None
Cut handle	Eye/Hand	Eye protection, 3" safety margin for band saw
Sand handle	Eye/Hand	Eye protection. Occupy both hands
Assemble handle to tool-tote	Hand	Careful handling
Finish handle and fill nail hole	None	None

Task Analysis: Wood Ends

1. Place 5 1/2" x8" pine stock in jig and drill 3/4 inch hole.
2. Place pine stock in jig and layout diagonal lines.
3. Cut diagonal lines on band saw.
4. Sand diagonal lines and top on belt sander.
5. Sand top edges and sides.
6. Apply Danish oil.

Task Analysis: Sheet Metal Sides and Bottom

1. Place sheet metal in layout jig and measure and layout fold lines and hems.
2. Center punch and drill relief holds.
3. Cut out.
4. Fold hems.
5. Use jig and center punch fastener holes.
6. Drill fastener holes.
7. Fold sides.

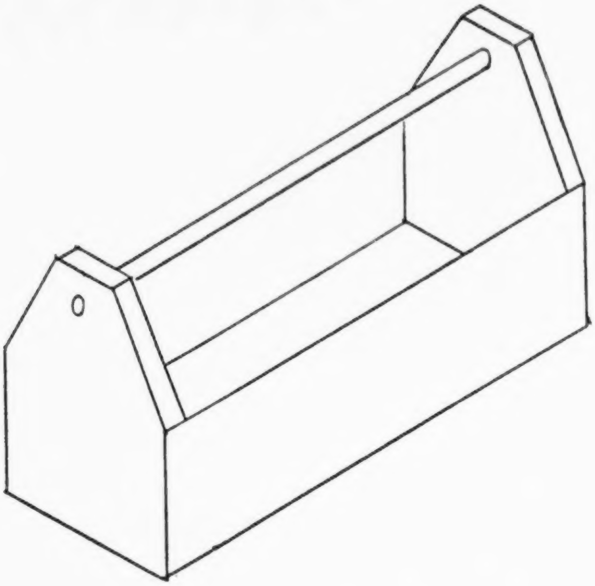
Task Analysis: Assembly

1. Nail wood ends to sheet metal.
2. Layout and cut dowel to length and sand.
3. Drill pilot holes for dowel.
4. Nail handle in place and set nails.
5. Fill nail holes.
6. Apply Danish to handle.

Student's Name	Class Behavior	Following Directions	Careers	Computer	Tool Identification	Vocabulary	Field Trip	

Peet Junior High School

CEDAR FALLS COMMUNITY SCHOOLS
CF
A TRADITION OF EXCELLENCE

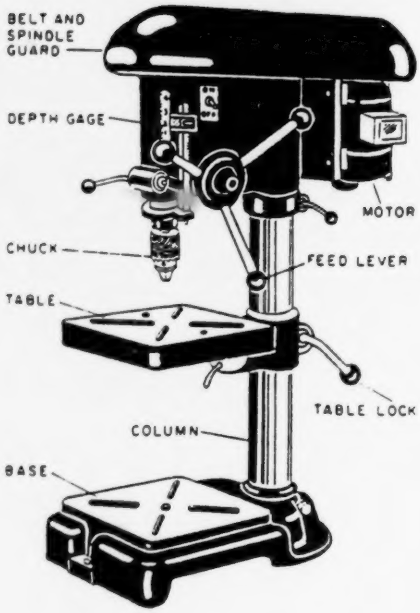


MGM

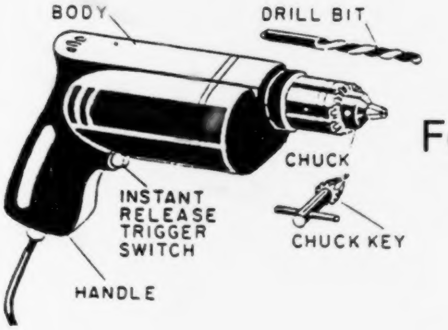
Hour ________ **Name** ____

Drill Press

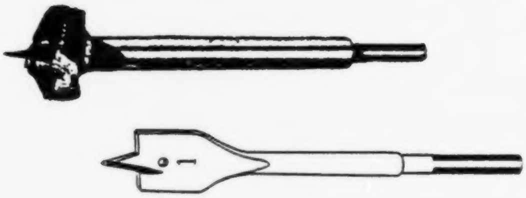
Stationary Power Drilling Machine


BELT AND SPINDLE GUARD
DEPTH GAGE
MOTOR
CHUCK
FEED LEVER
TABLE
TABLE LOCK
COLUMN
BASE

Portable Power Drill


BODY
DRILL BIT
CHUCK
INSTANT RELEASE TRIGGER SWITCH
CHUCK KEY
HANDLE

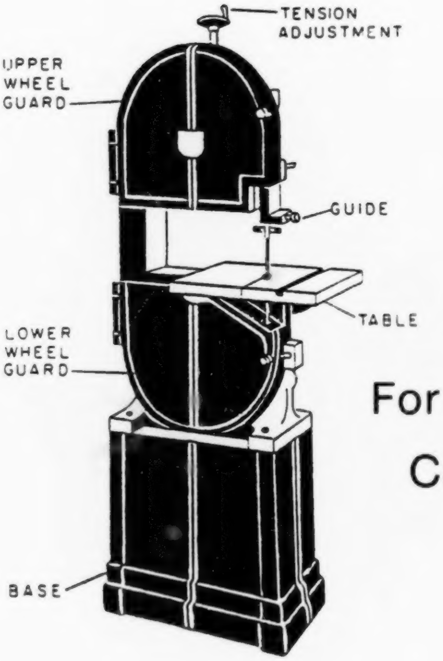
For Power Drilling



Power Drill Bits for Wood

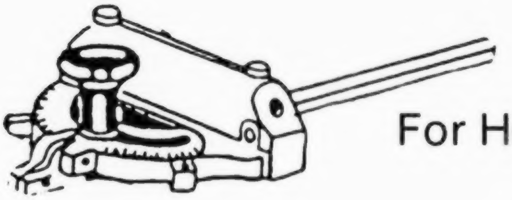
Must be Used with Power Drills

Band Saw


TENSION ADJUSTMENT
UPPER WHEEL GUARD
GUIDE
TABLE
LOWER WHEEL GUARD
BASE

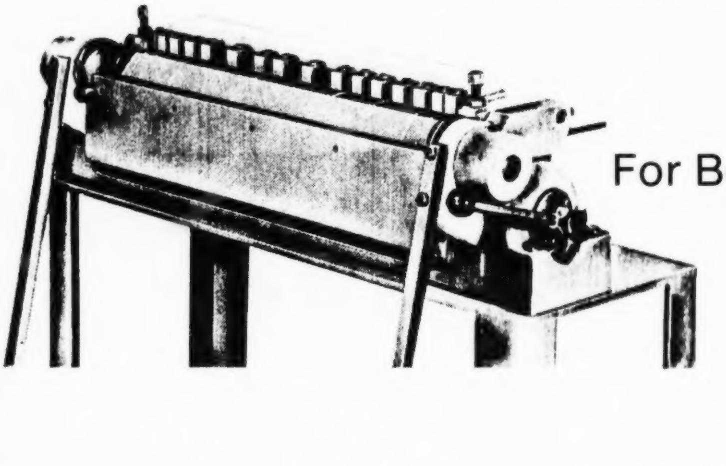
For Straight and Circular Cutting of Wood

Miter Gauge



For Holding Stock While Cutting

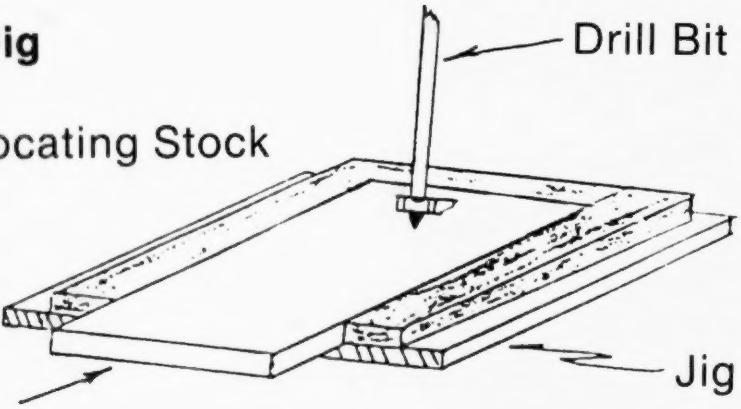
Box and Pan Brake

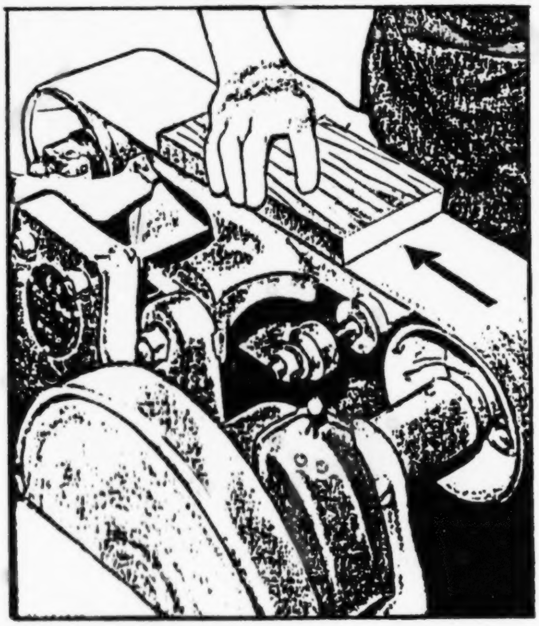


For Bending Sheet Metal

Jig

For Holding and Locating Stock



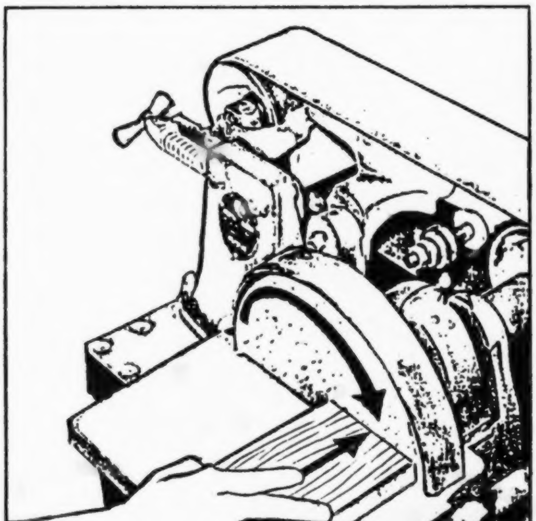


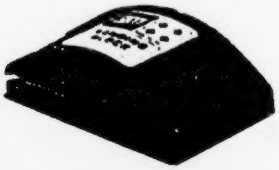
Belt Sander

For Sanding Straight Areas

Disc Sander

For Sanding Straight Areas



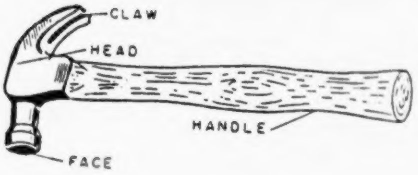


Sanding Block

To Hold Sand Paper While Hand Sanding

Power Sander

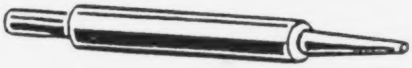
For Sanding Large Flat Areas


CLAW
HEAD
HANDLE
FACE

Claw Hammer

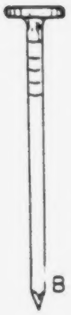
For Driving Nails

Nail Set

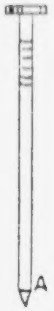


For Countersinking Nails

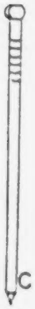
Nails



Common

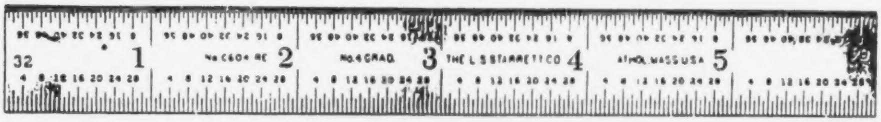


Box

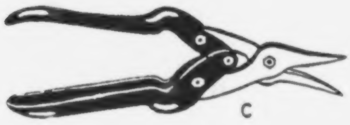


Finish

Steel Rule

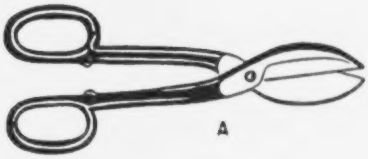

32
1
2
No.4 GRAD.
3
THE L.S.STARRETT CO
4
ATHOL, MASS.U.S.A.
5

For Measuring

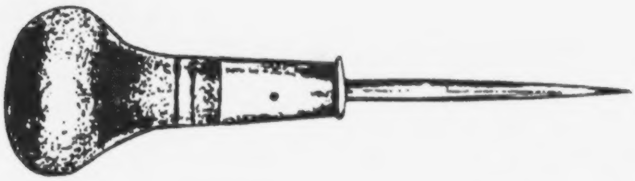


Aviation Snips

For Cutting Sheet Metal

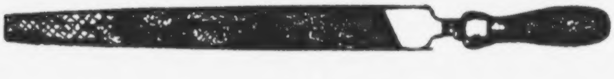


Straight Snips



Awl

For Scribing Lines on Metal



File

For Smoothing Metal

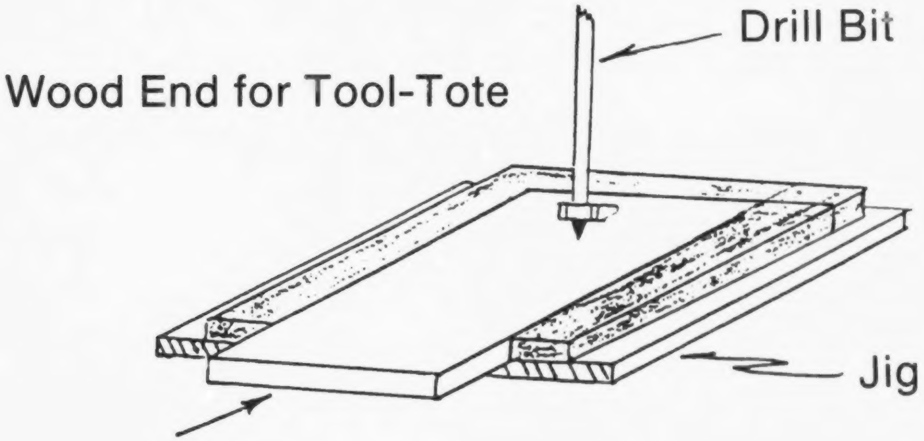
List of Tools

Aviation Snips - for cutting sheet metal
Awl - for scribing lines on metal
Band saw - for straight and circular cutting of wood
Belt sander - for sanding straight areas
Box and Pan Brake - for bending sheet metal
Claw Hammer - for driving nails
Disc sander - for sanding straight areas
Drill Press - Stationary power drilling machine
File - for smoothing metal
Jig - for holding and locating stock
Miter gauge - for holding stock while cutting
Nails - common, box, finish — for holding together
Nail Set - for countersinking nails
Power Drill Bits - used with power drills
Portable Power Drill - for power drilling
Power Sander - for sanding large flat areas
Sanding block - to hold sand paper while hand sanding
Steel Rule - for measuring
Straight Snips - for cutting sheet metal

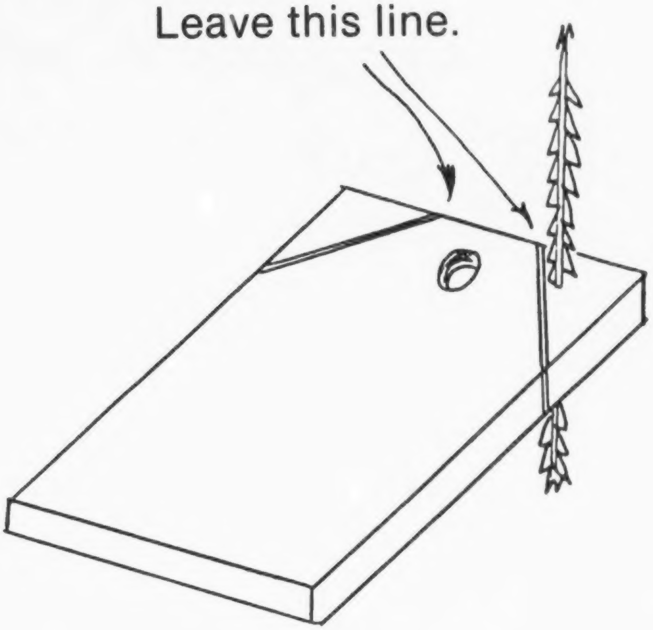
Vocabulary

align - bring into line or line up
countersink - to set the head of a nail below the surface
dowel - wooden stick that's smooth
portable - something that can be moved around
putty - sticky material to fill holes
scribing - scratching a line on metal
stock - material being used
templet - a guide or pattern

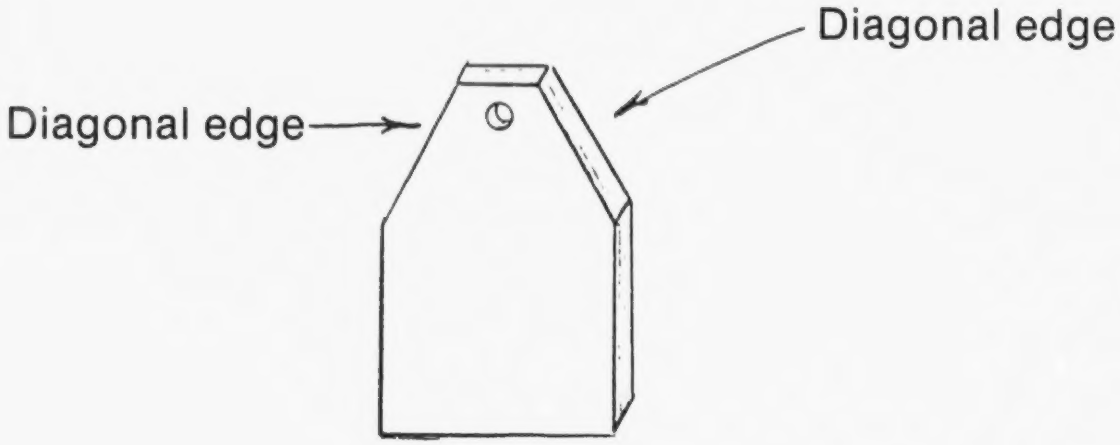
Wood Ends


Drill Bit
Wood End for Tool-Tote
Jig

1. Drill 3/4″ hole for handle.
2. Layout corners using the templet and a pencil.
3. Cut corners on the bandsaw.
4. Be careful not to cut the line off the stock.

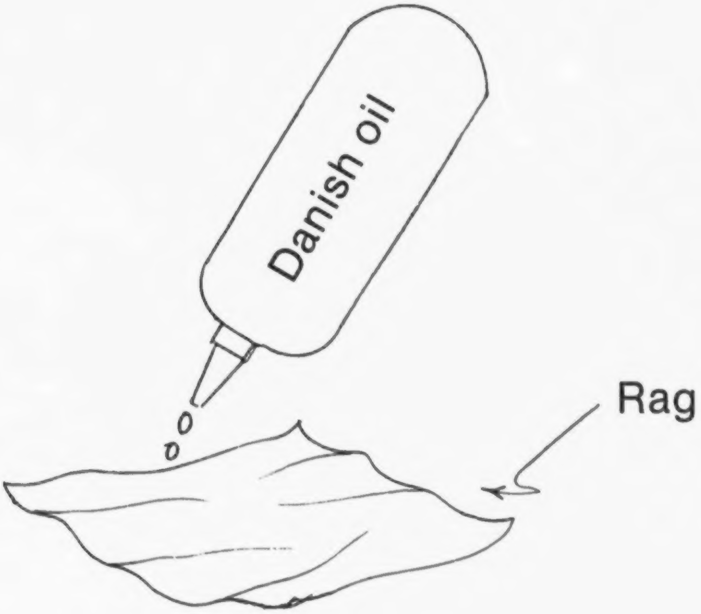

Leave this line.

5. Sand and true the diagonal edges on belt sander.


Diagonal edge
Diagonal edge

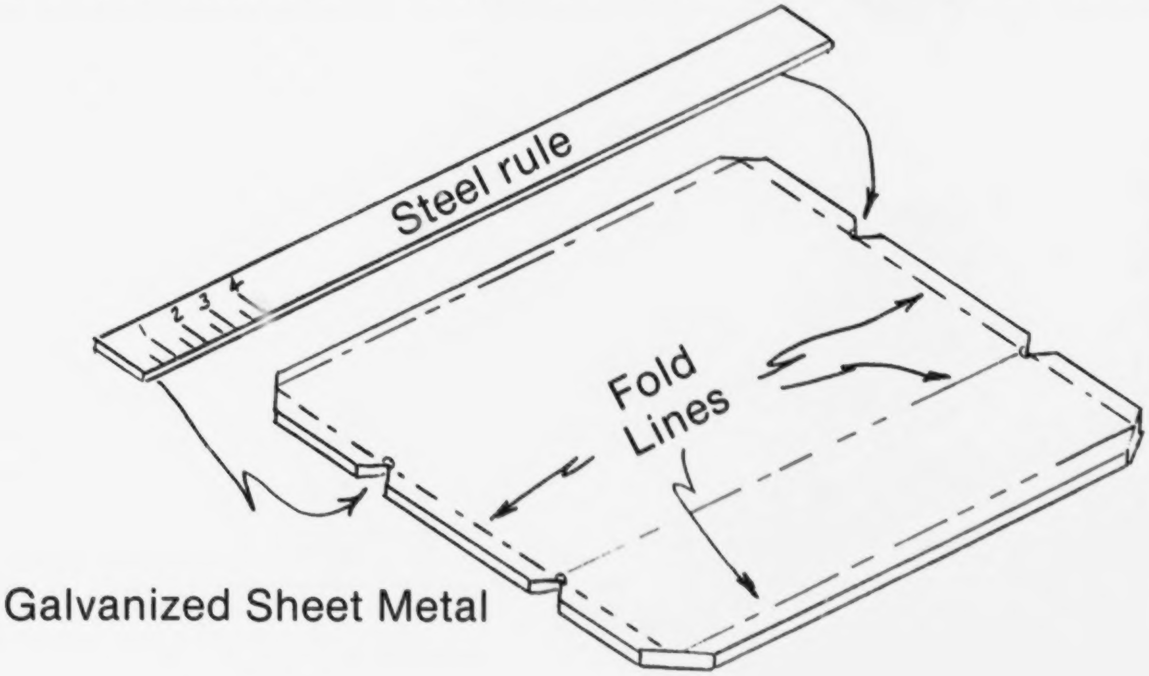
6. Sand three top edges and flat surfaces with sanding block or power hand sander.

7. Apply danish oil. Apply oil to rag. Rub rag on wood ends to apply oil.

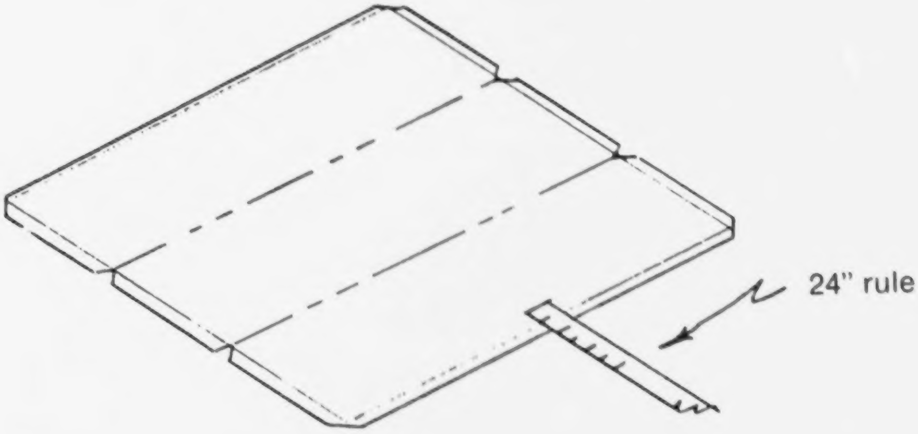

Danish oil
Rag

Sheet Metal Sides

1. Align pattern and layout corners and relief holds (awl).
2. Layout fold lines between relief holes (steel rule & awl).

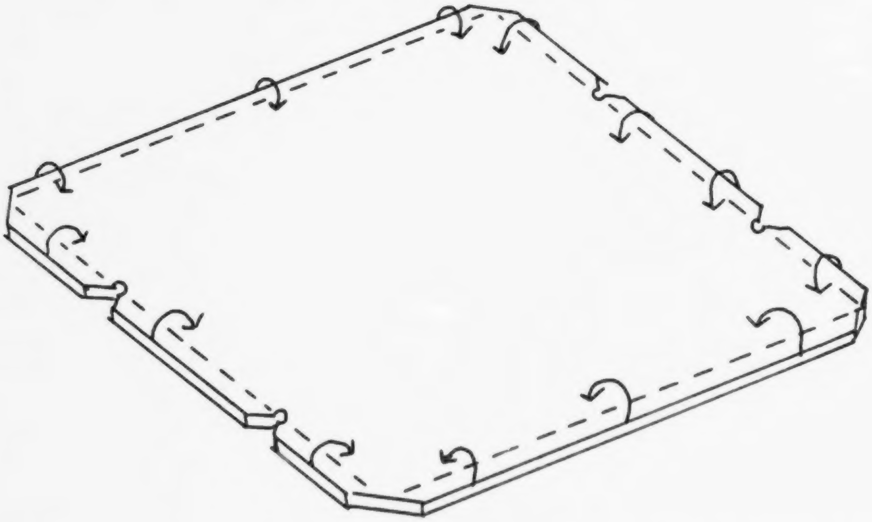

Steel rule
1
2
3
4
Fold Lines
Galvanized Sheet Metal

3. Measure 1/2 inch hems and layout (awl and 24" rule).

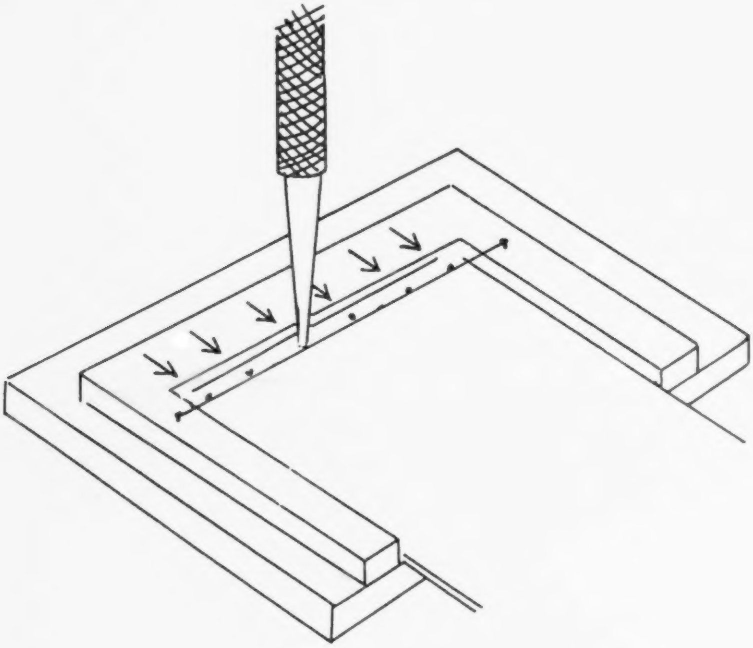


4. Punch relief holes and drill (center punch, hammer and drill).
5. Cut corners and relief (aviation snips).

6. Fold hems (box and pan brake).



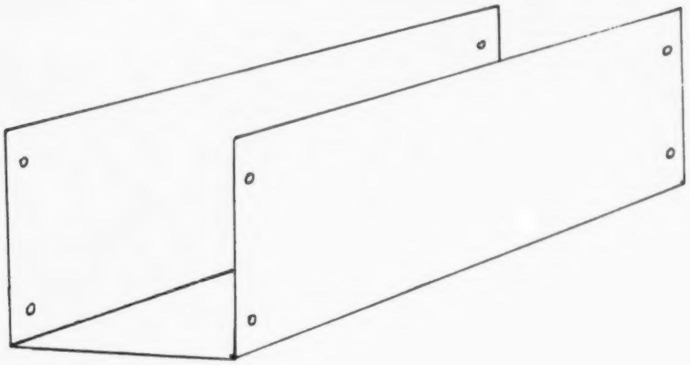
7. Center punch on wire at arrows for fastener holes. Do both ends of sheet metal



8. Drill holes for fasteners (power hand drill).

158

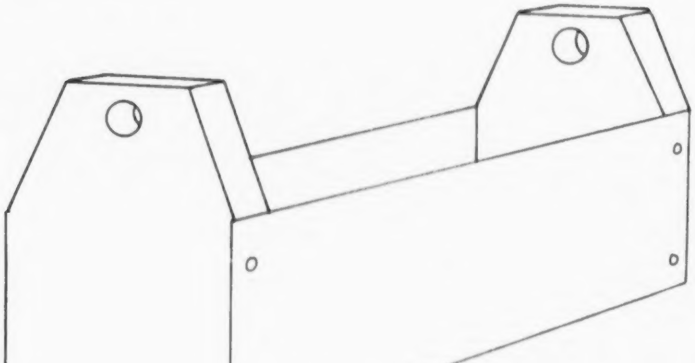
9. Fold sides (box and pan brake).



Assembly

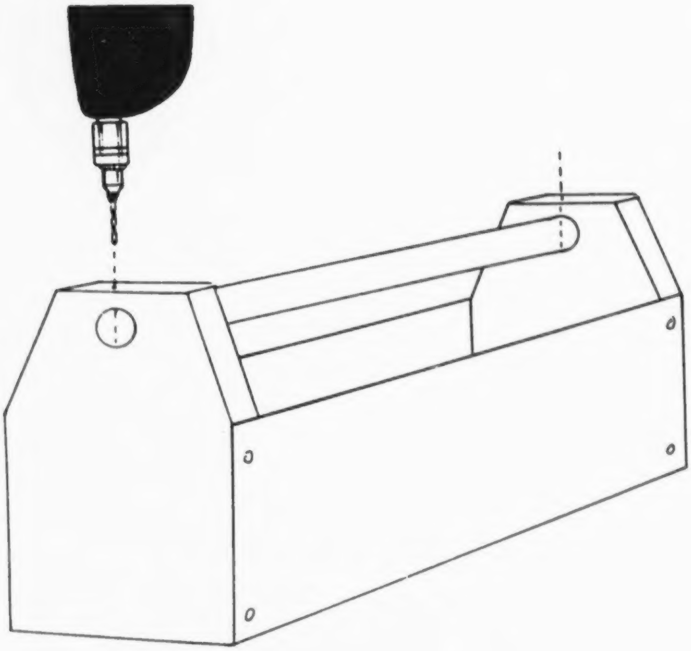
Dowel Handle:

1. Sand one end of dowel (belt sander).
2. Layout length according to length of bottom and sides (mark with pencil).
3. Cut to length. Leave layout line (miter gauge and band saw).
4. Sand cut end, leave line (belt sander).
5. Sand sides of dowel.
6. Align wooden end with sheet metal end and nail. Do both ends (hammer and box nails).



7. Insert dowel through holes and align.

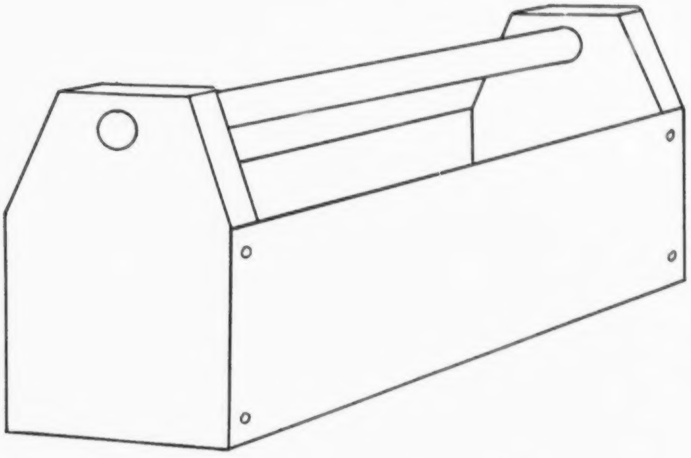
8. Drill pilot hole for nail through dowel.



9. Drive finish nail and set for both ends (hammer, finish nail and nail set).

10. Fill set nail hole with putty and wipe clean.

11. Apply danish oil to dowel handle.



Lesson Plan No. 1

Area M.D.
References: Student Manual

Unit Tool-tote
Est. Time30

Aim: Introduce unit to class.
Introduce tools and machines.
Demonstrate processes to construct wooden ends.

Content:

I. Introduce tool-tote as a group project
    A. Explain procedure
        1. Compare to production techniques used in industry
II. Introduce student manual
    A. Explain use
    B. Use manual to introduce tools and machines for wooden ends
III. Demonstrate operations for wooden ends and divide students
    A. Drill handle hole
    B. Layout jig
    C. Band saw
    D. Belt sander
    E. Hand sander
    F. Finish
IV. Student walk through

Equipment Needed:

1. Tool-tote prototype
2. Jigs
3. Drill press
4. Band saw
5. Belt sander
6. Sanding block
7. Abrasive
8. Danish oil & rags
9. Pencil

Methods: Story telling, discussion and demonstration

Assignment: None

Lesson Plan No. 2

Area M.D.
References: Student Manual

Unit Tool-tote
Est. Time 30

Aim: Review wood machine and tools
Introduce equipment for metal sides.

Content:

I. Review vocabulary, tools, and machines for wood
II. Introduce tools and machines for metals
    A. Layout jig
    B. Center punch and drill relief holes
    C. Cut
    D. Fold hems.
    E. Center punch and drill fastener holes
    F. Fold sides

III. Student walk through

Equipment Needed:

1. Jigs for layout and fastener holes
2. Portable drill and 3/16 bit
3. Drill press and 3/32 bit
4. Steel rules
5. Awl
6. Snips
7. Box and pan brake

Methods: Demonstration

Assignment: None

Lesson Plan No. 3 & 4

Area M.D.
References: Student Manual
Unit Tool-tote
Est. Time 10

Aim: Review names of tools, machines and vocabulary.
Construct metal sides.

Content:

I. Review tool and machines by showing to student and ask them to name them
II. Work with student as they produce metal sides
    A. Assist where necessary

Equipment Needed:

1. Same as Lesson 2
2.
3.
4.
5.
6.
7.

Methods: Lab activity

Assignment: None

Lesson Plan No. 5 & 6

Area M.D.
References: Student Manual
Unit Tool-tote
Est. Time 10

Aim: Review names of tools, machines and vocabulary.
Construct wooden ends.

Content:

I. Review tools, machines and vocabulary (show and ask)
II. Review Operations
III. Set-up and run end as explained in lesson one
    A. Assist where needed

Equipment Needed:

1. Jigs for drill press
2. Drill press and 3/4 drill
3. Jig for layout
4. Band saw
5. Disc sander
6. Portable sanders
7. Sanding blocks
8. Abrasives
9. Danish oil and rags

Methods: Lab activity

Assignment: None

Lesson Plan No. 7

Area M.D.
References: Student Manual
Unit Tool-tote
Est. Time 30

Aim: Students will know how to assemble tool-totes.
Finish presenting tools not yet covered.
Review other tools and vocabulary.

Content:

- I. Introduction
  - A. Draw parallels to industry
- II. Present new tools and review other tools and vocabulary. (See manual)
- III. Demonstration
  - A. Nail ends, side and bottom
  - B. Layout handle and cut to length
  - C. Sand end, on belt sander
  - D. Assemble handle, drill pilot and nail
  - E. Fill nail holes and apply Danish oil
- IV. Divide class into teams and walk through

Equipment Needed:

1. Band saw and miter gauge
2. Belt sander
3. Hammers
4. Portable drill and cut nail for bit
5. Nail set
6. Stick putty
7. Danish oil and rags

Methods: Demonstration and lab activity

Assignment: None

Lesson Plan No. 8 & 9

Area M.D.
References: Student Manual
Unit Tool-tote
Est. Time 30

Aim: Students will know how to assemble tool-totes.
Finish presenting tools not yet covered.
Assemble tool-totes.

Content:

- I. Introduce field trip
  - A. Watch for special safety equipment in use
  - B. Notice how workers specialize at certain tasks
  - C. Notice assembly line (production techniques)
- II. Review
- III. Set-up and assemble tool-totes

Equipment Needed:

1. Same as Lesson 7

Methods: Discussion and demonstration.

Assignment: None

Lesson Plan No. 10

Area M.D.

Unit Tool-tote

References: Student Manual

Est. Time 30

Aim: Distribute finished tool-tote and evaluate.

Content:

I. Review tools, machines and vocabulary

II. Draw numbers for students to select tool-tote

III. Paint with stencil (teacher)

IV. Oral quiz on tool and machine I.D.

V. Congratulate students on a job well-done

Equipment Needed:

1. Paint
2. Stencils
3. Awl
4. Aviation snips
5. Claw hammer
6. Nail set
7. Band saw
8. Drill press
9. Straight snips
10. Drill bit
11. Portable power sander
12. Miter gauge

Methods: Discussion and lab

Assignments: None

Chapter 6

Computers

The great difficulty in education is to get experience out of ideas.

George Santayana

Chapter 6

Computers

Iowa has been and continues to be involved in intensive staff development with industrial education and special education instructors. The microcomputer has been explored and utilized in this staff development and in special projects implemented in local education agencies. Instructors have discovered that in order to choose or create appropriate software, they must be knowledgeable of the elements which facilitate program success with students. This chapter reflects on some of those critical elements and makes recommendations to instructors about using and sharing computer programs.

Purpose and Objectives

Instructors readily indicate different purposes for using the computer. Instruction takes on several meanings depending on the objectives to be achieved by students. Objectives, therefore, can drastically affect the format of a computer program.

Purposes for computer assisted instruction and their description are:

Instruction and Tutoring: The program must be designed to present new material and provide an evaluation of the level of mastery. The program must assume no previous knowledge of material and carefully guide the student through all the necessary information for understanding. Students are provided explanations if incorrect responses are given during practice exercises.

Application and Transfer of Knowledge: The program must be designed to present problematic situations requiring interpretation and application of acquired knowledge. Consequences are realized through specific actions and decisions made by the student.

Drill and Practice: The program must be designed to build skills through repeated exercises until minimum proficiencies are met. The student is assumed to have previously studied the area and is working to achieve a degree of mastery (vocabulary, math skills, definitions of parts, etc.).

Principles in Learning

Basic principles of learning being used by instructors for guiding classroom instruction can also be used to select and guide software development. The use of these principles ensures quality in the software. Basic principles of learning for software include:

Relevant Material: Material is accurate - no errors. Student is ready for material. Material is congruent with course/student objectives.

Sequenced Material: Material progresses from simple to complex or known to unknown or familiar to unfamiliar.

Motivation: Learner is introduced to material in a personal manner (example: use of name).

Clear directions are available to put student in control of the program.

Language/vocabulary is on the student's level.

Visual and audio signals are introduced into the program to make it multi-sensory.

Surprises are used (e.g. flashes or sounds intermingled in the feedback).

Student controls the length of time material is on the screen. Student is given an opportunity to choose from a variety of lesson formats.

Pace of program is varied and changed to vary student interaction. Humor is used to maintain interest.

Feedback: Student is informed of what he/she is doing correctly or incorrectly.

Student is informed of why response is incorrect.

Reinforcement: Graphics are used to box, underline or emphasize important material.

Graphics are used to reinforce learning of a concept or principle rather than to just attract attention.

Instructions for operating a program are available when they are needed. Examples are provided for the student.

After an incorrect response the student is given the option to review supporting material or to advance to new exercises. (Repeated failures or incorrect responses are not appropriate.)

Practice: Demonstration and exercises are tied closely to objectives. Student uses information in applied problems.

Flexibility: Program allows the student to review previously presented material.

Program allows different levels of difficulty and lengths of instructional units.

Major Software Problems

Special education and industrial education instructors often express problems with software.

Commonly expressed problems include:

1. The amount of space between lines is too limited. Lines of print are too close together.
2. Type size is too small and causes fatigue.
3. Unusual type styles confuse poor readers.
4. Important items are not emphasized or practiced enough times. More repetition is needed in practice exercises.
5. Text and graphics do not appear together on the screen so reasoning and transfer of thought is squelched.
6. Screen prompts are not used enough to remind the student how to respond, progress or get help. Hints are not used enough to help students.
7. The reading level of software is not reasonably close to the student's reading level.
8. Sentences are too long and complicated. Sentences should communicate a single idea at a time.
9. Terms should be consistent throughout a program. Different words with similar meanings should not be used in a cross-reference position within a program (example: hammer/maul or fluid/liquid).
10. Software is destroyed too easily. Multiple backup copies are needed and should be readily available.

These problems can be corrected if they are communicated to software producers. They should also be considered when creating software. When instructors violate basic principles of learning, they take the risk that the software they create will be ineffective or unacceptable for their students.

Evaluating Software

When evaluating software, consider actual student use plus the above information. No one really knows what will or will not work in a given situation with a given student. Much software not originally developed for disabled student learners is effective with them.

If possible, borrow programs to test with students before buying them. Listen closely to what students have to say about the programs. Look closely for difficulties they encounter. Student responses, along with your judgment, are good indicators of the worth of a program.

Your Own Software

Developing software can be a heavy burden. It is terribly time consuming and not recommended for most instructors. Therefore, you may want to consider one or more of the following arrangements.

1. Develop a list of specifics that you want considered when software is developed for you by students or professionals in or outside your district. Use the information from this article to develop your list.
2. Contact computer programmers who are in training to develop software for you. Four-year colleges, universities, community colleges and private schools that offer training are good prospects. Also, high school students in your own district can help.
3. Contact support personnel in special education to help. Some states have support persons who work on an area or county basis in the state. Give them the opportunity to help you develop software.
4. Identify software that needs to be developed and send your ideas to publishing companies. They may be willing to pay you for your expertise and ideas.
5. Trade unprotected computer software to increase your library.

Software Exchange

We would like to share with you some software that incorporates learning principles and addresses formatting problems as discussed here. It is with that spirit in mind that we offer "Understanding Board Feet"—a public domain tutorial program. The description follows, and the disk is one of four included in this publication.

The Iowa Disk on Understanding Board Feet

This program is designed to demonstrate computer-assisted instruction in the tutorial format. It contains a tutorial on understanding board feet along with information on the procedures to solve problems in board feet. There is also a matching quiz over the content and selection of related wood programs. These programs include:

1. Board feet
2. Wood characteristics
3. Wood safety drill
4. Wood dimensions
5. Wood moisture
6. Operating the table saw
7. Measurement drill
8. Fraction drill
9. Letters for high graphics
10. Radial arm saw

Three other disks are provided in this publication. They include "Adaptation Techniques," "Modified Industrial Arts" and "Suroski Files 4." The description of each disk follows.

The Adaptations Techniques Disk

Purpose: To assist the teacher in selecting and developing strategies or techniques to use in helping the mildly handicapped student.

Contents: Approximately 65 techniques that teachers have found helpful in accommodating problems such as distractability, low reading level, the need for extra practice, etc.

Format: The techniques are accessed by using a menu that appears on the screen following disk insertion and "booting." The initial selection is from a list of learner characteristics. This list was developed by teachers who were asked to identify the most common problems encountered when they worked with mildly handicapped students. Once a problem area has been selected a second menu appears listing the techniques teachers have found helpful in dealing with the problem. After selecting a technique the user is presented with text that describes the technique and in some cases provides a reference for additional information. After reading this description the teacher presses the space bar and is provided with an additional menu that allows the teacher to:

1. Obtain a printed copy of the description
2. Return to the list of techniques
3. Return to the list of problems
4. Delete the technique
5. Enter a new technique that the teacher considers helpful to accommodate the problem. (This technique is then added to the disk and the title appears as a part of the menu of available techniques.)
6. Quit

Modified Iowa Industrial Arts Disk

This disk contains a collection of programs developed by Iowa teachers in a two-week summer workshop at the University of Northern Iowa under the direction of Dr. Ronald Bro. These programs demonstrate various examples of computer usage in the classroom. Complex programming has not been used in the majority of programs and they can easily be applied in the industrial arts classroom. Programs contained in this disk include:

General Interest Programs

1. Measurement drill
2. Fraction drill
3. Loan and interest cost analyses
4. Time equals money
5. Alphabet for high graphics
6. Scientific notation
7. Test percentages
8. The computer system

Energy and Power Programs

1. Assault vehicle speeds
2. Engine test drill
3. Sun's rays
4. Ohm's Law
5. Ohm's-Watt's Law
6. Resistor color decoding
7. Basic electricity drill
8. Basic electricity test

Production Programs

1. Break-even point
2. Concrete calculations
3. Roof framing
4. Estimating construction costs
5. Common machine shop formulas
6. Sheet metal project costs
7. Plastics test and drill
8. Wood safety test and drill
9. Board feet
10. Wood characteristics

Some of these programs have been modified for use by special education students. This modification was done at the Suroski Center, the University of Northern Iowa.

Suroski Files 4

"Suroski Files 4" contains commercially available materials in industrial arts that are suitable for use with mildly handicapped secondary students. The materials are organized by content area and listed below.

1. Publishers
2. Industrial Arts Draw and Plan
3. Industrial Arts Electronics
4. Industrial Arts Home Maintenance
5. Industrial Arts Machinery
6. Industrial Arts Measurement
7. Industrial Arts Metals
8. Industrial Arts Leather
9. Industrial Arts Plastics
10. Industrial Arts Safety
11. Industrial Arts Woods
12. Career Education Awareness
13. Career Education Accommodation
14. Career Education Exploration
15. Career Education Preparation
16. Career Education General

The Suroski Files

The Suroski Files is a collection of seven computer disks that contain information on commercially

available materials suitable for use with mildly handicapped secondary students. These are available from the Suroski Center at the University of Northern Iowa, along with many other disks.

The Suroski Files are organized by content area and each disk contains one or more content areas. To use a disk, insert it in the disk drive and "boot" the disk. Once the disk is booted the first menu that appears shows the different content areas of materials available. The user selects a content area by entering the number corresponding to the desired area and the computer loads the information related to that area into memory. Sometimes this process is rather slow but watch for the flickering light on the left side of the screen to assure you that data is being loaded.

When the data is loaded, a two-item menu appears on the screen. This menu will allow you to list records or go to another menu with additional options. For review purposes it's best to select one and look at the different materials available. You'll notice that each record has a number, the publisher is listed, the date of publication is available, the title, the interest level or the grade at which these materials would typically be used, the reading level of the materials if different and if available, any cross reference to another area, and the format of the materials along with the price effective in the last year.

Should the user desire more information about an item, she or he can note the record number of the material and press escape to go back to the original menu. Once at this menu the user selects "two," which takes him or her to a more thorough menu. To get a copy of a particular record number, select "seven" and then answer the question in terms of printer options. Usually "two" for 80 columns will suffice. The computer screen now shows you the menu once again and you will note that selection seven now says turn off the printer. In this case the printer is on and you would have to use seven to turn it off.

To find the particular records you wish to print select two to search for a particular record and the screen will show you an additional menu. You will be searching for a record number so select zero and then enter the number of the records you wish to find. The printer will print the record for you and the screen will show you a new menu that allows you to search for more records and print them or to make changes or to return to the main menu.

Option three allows you to return to the menu and in most cases you will then want to find information about the publisher of that particular material. In this situation select one to take you back to the original menu where you are allowed to select a data base. At this point select eight, publishers. Be patient; publishers is a large file and takes approximately 30 seconds to load. Remember, if the little light is blinking on the left side of the screen that means data is being loaded into memory.

Once the publishers file is loaded you can look for a particular publisher. Simply scroll through the publishers until you find the one you're looking for, or use the search option from the second menu. To accomplish this press two, the second menu will appear, and then press two again for search. In this case you will be searching for a name so press one. That will allow you to enter the name you are searching for. Be careful to enter the name exactly as you see it on the original record. If you're using an Apple IIE be sure the lock is down for all capital letters. Once you've entered the name, press the return key and the record for that particular publisher should appear. Note that the name, department, street, city, state, zip code and phone, including toll free numbers where available, are provided.

The eighth category, REF, is for additional information or a reference person should one be available. If you don't find the publisher you're looking for, scroll through the list until you see the one you want. If you want a printed copy of the publisher information use the procedure previously described.

If a publisher is not included, please notify the Suroski Center. At this point you can select return to menu and it will take you back to the nine-option menu you used before. The additional functions on this menu are beyond the scope of this description. However, information on those can be obtained from the Suroski Center, University of Northern Iowa, Cedar Falls, Iowa 50613.

Suroski Center
Order Form For Computer Programs

Computer Programs	Quantity
1. Adaptation Techniques	
2. Arithmetic Program	
3. Authoring Program	
4. GONWA Procedure	
5. IEP	
6. Micro Master #1	
7. Micro Master #2	
8. Micro Master #3	
9. Vocab #1	
10. Vocab #2	
11. Vocab #3	
12. Vocab #4	
13. Post Secondary	
14. Readability	
15. Spelling	
16. State Iowa Mod. Program/Indust. Art	
17. Suroski Files #1	
18. Suroski Files #2	
19. Suroski Files #3	
20. Suroski Files #4	
21. Suroski Files #5	
22. Suroski Files #6	
23. Suroski Files #7	
24. Workshop Disk #1	
25. Workshop Disk #2	
26. Workshop Disk #3	
27. Leisure Disk #1	
28. Leisure Disk #2	
29. Games 100	
30. Sports 200	
31. Nature 300	
32. Collecting 400	
33. Craft 500	
34. Art & Music 600	
35. Entertainment 700	
36. Volunteer 800	
37. Organization 900	

When you place an order at the Suroski Center, please furnish us with disks for the requested programs. Also, furnish a mailing envelope with postage so we can return the programs promptly to you. If you cannot provide us with the above items, there will be a fee of $1.00 per disk, and also the cost of the return postage.

Thank you for your cooperation.

The Suroski Center
Special Education Department
University of Northern Iowa
Cedar Falls, Iowa 50613

Chapter 7

Modifying Teaching Techniques and Environments

> The important thing is poise. How a man handles a situation is much more important than the situation itself.
>
> *Jawaharlal Nehru*

Chapter 7

Modifying Teaching Techniques and Environments

The challenges that students provide necessitate that teaching techniques and classroom environment be continually examined by teachers. This chapter suggests ways to alter the learning environment to accommodate a wide range of learners and alternative approaches to examining teaching techniques and environment.

Reaching Low Achievers

Research shows that teachers behave differently toward low achievers. The following checklist can be used by you to monitor your behavior. The checklist was taken from "How To Reach Your Low Achievers" by Joan Martin, *Vocational Education Journal*, August, 1985.

Reaching Low Achievers—Checklist

	Yes	No
1. Do you call on low achievers less often than on high achievers to respond to questions or make classroom presentations?	/ /	/ /
2. Do you provide low achievers with less accurate and detailed feedback?	/ /	/ /
3. Do you fail to give low achievers feedback on classroom responses?	/ /	/ /
4. Do you praise low achievers more frequently than high achievers for marginal or inadequate public responses?	/ /	/ /
5. Do you praise low achievers less frequently after successful classroom experiences?	/ /	/ /
6. Do you ask low achievers fewer follow-up questions and give fewer clues to answers?	/ /	/ /
7. Do you wait less time for low achievers to answer questions?	/ /	/ /
8. Do you interrupt low achievers more often when they respond to questions?	/ /	/ /
9. Do you criticize them more often when they don't make the correct response?	/ /	/ /
10. Do you provide the answer or call on someone else instead of trying to improve a low achiever's response by giving clues or rephrasing the question?	/ /	/ /
11. Do you require less and lower quality work from your low achievers?	/ /	/ /
12. Do you locate low achievers in a group or seat them far from the teacher?	/ /	/ /
13. Do you pay less attention to low achievers in academic situations—smile less often and avoid eye contact?	/ /	/ /
14. Do you use less direct instruction with low achievers and more seat work?	/ /	/ /
15. Do you grade low achievers' tests differently, failing to give them the benefit of the doubt in borderline situations?	/ /	/ /
16. Do you interact less frequently in public with low achievers?	/ /	/ /

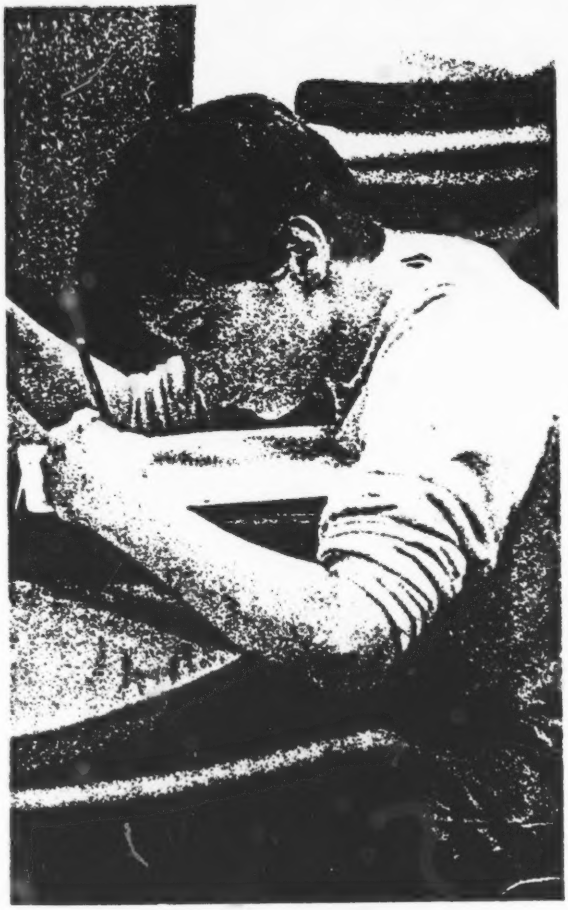
—You should answer "no" to all questions.
—If you have 5 or more "yes" answers, seriously consider changing your behavior.

Student Interaction Check

Students can select qualities in teachers that best meet their learning styles and learning needs.

The following qualities were selected by 103 teenagers and reported by Larue Barnes in the article entitled "I Wish All Teachers Would," *Vocational Education Journal*, August, 1985.

1. Don't choose favorites
2. Meet individual needs
3. Understand each student is different because they are brought up differently
4. Don't "smart off" or be sarcastic
5. Treat students with respect
6. Attempt to deal with troublemakers before sending to office
7. Be consistent
8. Be firm but fair
9. Have a sense of humor, laugh but be serious about teaching
10. Encourage and compliment us
11. Remember my name
12. Be a friend
13. Smile
14. Don't take anger out on class
15. Give homework to reinforce what I have learned in class
16. Love your job and love children
17. Don't assume we already know
18. Try to find out why a student doesn't try or care
19. Remember attentive students as well as troublemakers
20. Be enthusiastic
21. Listen to your students
22. Present material clearly
23. Help students review for tests and test often
24. Be a real person—real you
25. Teach respect for school, country and you
26. Print rules for class and explain type of tests given
27. Reward your class sometimes
28. Do not let a student treat you disrespectfully
29. Help as much as you can when a student doesn't understand
30. Admit you are wrong if you are
31. Don't ask for an opinion if you cannot accept an honest one
32. Tell students what they are doing wrong and help them change
33. Be on time to class
34. Don't embarrass students and don't encourage them to put each other down
35. Don't make a student feel dumb
36. Try to see things from a student's point of view



37. Don't chew gum or drink coffee or cokes in front of students
38. Don't criticize other teachers
39. Be willing to help a student after class
40. Don't be afraid to share feelings
41. Don't give up on a student who is trying
42. Stand up when you teach
43. Don't be moody
44. Choose respect over friendship when it comes to students
45. Have a clean mind—be an example
46. Make all students feel included

Testing

Test administration is not an easy task but is a natural circumstance in the classroom and must be managed well to be effective. The following checklists are taken from "Do's and Don'ts of Giving Tests" by Rick Foster, *Vocational Education Journal*, June 1982. Some additional items have been added to the original checklists.

Do's and Don'ts of Giving Tests

Testing should be more than a terminal assessment of a student's capabilities. Tests can be used to diagnose weaknesses, motivate learning and to help determine teaching methods and instructional materials.

Test Preparation

Do:

1. Tell students how you plan to evaluate
2. Evaluate only important areas of concern
3. Provide precise and clean written and oral directions
4. Be grammatically correct
5. Make tests easy to read
6. Make tests easy to score
7. Place a title on test papers
8. Number pages
9. Arrange items neatly, attractively and logically
10. Typewrite and duplicate test forms
11. Proofread the master copy
12. Place easier items at the beginning of the test
13. Provide point values for each question or section
14. Provide guidelines for time allocations where appropriate
15. Take the test yourself before administering it to students

Don't:

1. Use trick or ambiguous questions
2. Use negative statements in test items
3. Arrange similar test questions in a haphazard or inconsistent manner
4. Use test as a punitive action
5. Test over insignificant or meaningless materials

Test Administration

Do:

1. Encourage positive attitudes about tests
2. Maintain consistent testing procedures for all students
3. Provide adequate information about the test well in advance
4. Become thoroughly familiar with the test and its directions
5. Make note of any corrections or clarifications to be announced
6. Prepare a test key before administering the test
7. Establish favorable physical conditions
8. Establish control of classroom before testing
9. Supply students with all materials needed
10. Read test directions aloud
11. Walk about room and observe progress
12. Answer legitimate questions
13. Maintain quiet during test
14. Handle cheating or copying problems firmly and as quietly as possible
15. Check for completeness when collecting papers
16. Provide additional activity for early completers
17. Provide audio tape versions of the test along with the printed versions or orally administer the test for students with severe reading problems

Don't:

1. Leave test materials or keys on your desk, in unlocked drawers or open cabinet shelves prior to testing
2. Allow students to take a test under adverse physical conditions
3. Allow unnecessary traffic or visitation during testing
4. Administer tests without three days adequate warning and explanation of test procedures
5. Use test time to read magazines or remain seated at your desk
6. Permit students to direct questions to you from across the room or bring questions to your desk
7. Give information that indicates the answer to any question or problem
8. Allow students to collect papers or bring them to your desk individually

Test Scoring

Do:

1. Use a cleaner, understandable method of grading
2. Be fair, honest, objective
3. Be open to student interpretation of items
4. Score each test directly from a key
5. Allow students to correct test if appropriate
6. Correct essays yourself
7. Score essay questions all at one time
8. Make encouraging remarks on test papers
9. Be conscious of personal fatigue while grading
10. Prepare item analysis on items of questionable validity
11. Return tests as soon as possible
12. Use a review of the test as a learning technique
13. Be conscious of student attitude and fatigue which may affect their achievement
14. Follow-up test grading with a student conference when appropriate
15. Keep a record of exam scores
16. Report scores objectively and clearly to parents and administration

Don't:

1. Allow personal reactions to students to interfere with grade determination
2. Criticize student performance in front of the class
3. Grade papers subjectively, relying on personal recall for the answers
4. Rely totally on the accuracy of scores obtained by student-corrected tests

Learning Centers

Purpose

You might accommodate students who are working at different levels by establishing learning centers. Students work at their own pace with materials that may be individualized to match their abilities.

Learning centers are activity-oriented places in which students are provided opportunities to make decisions, follow directions, practice new skills, reinforce old skills and work individually. Learning centers are a viable strategy for individualizing instruction for the handicapped.

The following describes why, where, when and how learning centers may be used in the classroom. The material was drawn from a publication entitled *Reaching Teenagers: Learning Centers for the Secondary Classroom,* Santa Monica, California: Goodyear Publishing Company, 1977.

Why

1. Learning centers are used to maximize the process of individualizing the curriculum to meet the needs and abilities of the students. Use them to reach teenagers.
2. Learning centers give students the chance to discover, explore and investigate areas of knowledge that interest them and, as a result, to remain occupied and advance further than students who have not been given a choice in selecting learning activities.
3. Learning centers provide the opportunity for success and reinforcement in content areas, thereby encouraging learners to pursue the topic further.
4. Studies indicate that students learn only what they are ready to learn. The center approach makes this concept effective in the classroom by providing options tied to readiness to learn.
5. Studies also indicate that no two learners come to school with the same knowledge or experiences. You can provide for these differences by using learning centers.
6. The opportunity to choose their learning activities in a given content unit will help students become responsible decision makers.

Where

1. Any teacher in any school facility can use learning centers in his or her teaching methodology.
2. Team teaching lends itself well to the learning center approach. Pooling resources among teachers can produce imaginative and interesting centers. When teachers are responsible for their speciality, they tend to develop excellent ideas. The classroom organization of team-teaching lends itself to the learning center approach.
3. Establishing centers in a secondary classroom allows you to structure the learning environment and set up centers so they meet the needs and interests of students in that classroom for that period of the day.

When

1. The learning center approach can be used at any time with any content at the secondary level. Every subject in the secondary curriculum can be adapted to the learning center format with a little effort and some creativity.
2. Teachers should allow enough time at the centers so they are not viewed as a way of making "homework" assignments. Make sure each student has the opportunity to go to the required centers for an adequate amount of time.
3. As the teachers and students become accustomed to the new routine, more centers can be added to allow for other areas of the curriculum and more individualization of instruction. In initiating the learning centers, allow two weeks to gradually acclimate the students to the centers and the class routine.

How

1. A learning center should provide the materials the student needs to do the activities of the center (except for routine writing materials).
2. Centers should also contain activities which challenge the learners. The activities should be designed for learners with different levels of knowledge and ability as well as diverse interests.
3. Teachers should decide on specific objectives for the content in the curriculum and incorporate these objectives in the learning activities to be used in the centers. These activities should be presented in an interesting manner.
4. Students usually work in the centers at their own rates and at their own level (unless you have prescribed a rate and level), and they should be encouraged to try different levels.
5. Learning centers that involve factual content materials should provide some type of self-corrective device so students can receive immediate reinforcement for their responses.

Suggestion: Learning centers are most effective when students can choose their learning activities in order to achieve and feel successful.

Grouping

Purpose

Grouping in the classroom can be an effective way to instruct students of varying ability levels. Groups can accommodate different interests, develop positive peer interactions, utilize pooled knowledge and resources, and provide a mutual support system for students with handicaps. Here are several methods of grouping students. The methods are taken from "Teaching Teen Reading Series," Ohio Department of Education, Columbus, Ohio, 1975.

Achievement Grouping. The class is divided into two or more groups by different levels of reading performance. This type of grouping is particularly useful in conjunction with the technique of questioning at different levels of comprehension. Since formal evaluation scores often reflect factors other than actual achievement, consider these questions:

a. Should observation supplement test results?
b. Where should the borderline student be placed?
c. Are provisions made for vertical movement between groups?

Research Grouping. Another temporary group may be formed to answer a question. Students will develop socially and intellectually as a result of working in such a group.

Interest Grouping. Students are teamed to complete tasks which represent common interests. Students may sign up for membership in such a group.

Skill Building Grouping. These groups are formed to overcome a skill deficiency or for reinforcement of skills. Following presentation of the skill, transfer occurs in materials on the students' appropriate levels.

Team or Pair Grouping. Students are given a specific task to accomplish. Activities for pairs might involve vocabulary building, designing solutions to problems, use of manuals or workbook questions. Solutions to problems are worked out together. Care is taken to team, or pair, students with others who are compatible.

Tutorial Grouping. One person with good reading and thinking skills can be teamed with one or more students who are having trouble. The tutor reinforces his or her own mastery while helping the learner. Since students tend to use language their peers understand, they make good tutors. Each individual's strengths are noted so that all can eventually serve as group leader or tutor. With directions from the teacher, the tutor may read portions of an assignment to others, clarify directions, react to answers and generally provide assistance.

Random Grouping. This is perhaps the most common form of collaboration in subject-matter classrooms. Two or more students are teamed randomly based on seating arrangement, counting off, role-playing or demonstrations. The most important element is encouraging interaction among students. Each student has the opportunity to verbalize his or her thinking as well as question other students.

Questioning Techniques

Purpose

Due to the various developmental and conceptual levels of students in a single classroom, teachers often reach only a few students with questions appropriate to their level of understanding. Using a test or study guide that uses literal, interpretive and evaluative questions will reach a wider range of students. This is a step toward successful individualization of instruction. The following suggestions were adapted to help you from a publication entitled *Taxonomy of Education Objectives* by Benjamin Bloom, David McKay Company, Inc. 1967.

Types of Questions

When students are asked questions on an exam, daily assignment, or during a class discussion, they are called upon to use various cognitive skills. These questions tap an individual's depth of understanding or comprehension and are often categorized in three levels: literal, interpretive and evaluative.

Literal. Questions that involve memorizing and recalling explicitly stated materials; simply "reading and reproducing the lines of print." The cognitive skills necessary to respond to a literal question include knowledge of terms, facts, concepts, principles, methods and procedures; and recalling previously learned material. Responding may only require locational skills.

Sample Questions— -Define these terms: armature, cam, bearing.
-Identify the major parts of a radial arm saw.
-Label the following drawing of the power miter.

Interpretive. Questions which involve comprehending implicit or latent meaning; determining what is inferred; "reading between the lines." The cognitive skills needed to respond include comprehension of principles and theories; interpreting charts and graphs; translating verbal material to mathematic formulas; or predicting outcomes or consequences from stated or implied material. They also require applying previously learned material in new and concrete situations; applying rules, methods, concepts, principles, etc; and analyzing material in its component parts so that organizational structure is understood. This includes indentifying parts and analyzing the relationship between parts.

Sample Questions— -Describe the steps in putting in a transmission.

-If you buy a $55,000 home with a down payment of $5,000 at an annual interest rate of 12 percent, how much interest will you pay the first year?

-Predict how much the steel rod will expand if heated an additional 10 degrees.

Evaluative. Questions that require one to make evaluative judgments based on internal or external criteria in addition to comprehending; "reading beyond the lines." The skills necessary to respond to an evaluative question include judging the logical consistency of written material, or the adequacy with which conclusions are supported by data; and judging the value of a work (art, music, writing) according to personal opinion or external standards of excellence.

Sample Questions— -After reading Chapter 6, do you feel computer-operated braking systems will increase comsumer repair problems?

-Some people argue that solar collectors will never be a financially feasible source of space heating. Is this argument based on facts or opinion?

-Is it realistic for an auto mechanic with a family of four children to buy an $80,000 house with a loan interest rate of 16 percent?

Uses of Questioning

The three levels of questioning (literal, interpretive and evaluative) are a valuable teaching tool and can be effectively used on quizzes, tests and exams, on daily worksheets, homework assignments, study guides, etc., and during classroom discussions.

Levels of questioning may be designated by the use of asterisks or some other notation. Students may be assigned one-, two- or three-asterisk questions, or combinations thereof on homework assignments, worksheets and exams. Students may have the option of selecting higher levels of questions for extra credit. The use of levels of questioning on quizzes and exams may be an alternative grading practice for assessing the student compared to his or her estimated ability.

At the secondary level, discussion more often consists of the teacher directing questions to students rather than stimulating an exchange between students. Teachers may tend to ask for recall of specific facts and details rather than ask for use of higher cognitive skills such as application, analysis, synthesis and evaluation. All students should have experience with all three levels of questions. A continuum of difficulty exists for each of the three types of questions.

The following sample study guide uses the three levels of questioning.

Industrial Arts

Directions: There are several important details in this section. As you read, answer the questions assigned to you. Sometimes the page, column and paragraph are given to help you locate the answer.

***1. Is a level a good substitute for a plumb line?

**2. How can you establish a straight line across a ceiling edge when the walls are crooked? (p. 111)

*3. What is the primary use of a square? (p. 112, #5)

**4. Name three types of planes. (p. 117, col. II)

***5. How many studs are needed to build a 32' wall with 16" centers?

Chapter 8

Peer Tutoring

> Individual commitment to a group effort—that is what makes a team work, a company work, a society work, a civilization work.
>
> *Vince Lombardi*

Chapter 8

Peer Tutoring

Peer tutoring can be done in an informal regular classroom setting using talented and gifted students or average students working with the below average students. Research on its effectiveness indicates that when done correctly, peer tutoring is a valuable tool. If done incorrectly, however, it is of little or no value and may do more harm than good.

This chapter provides information on organizing a structured approach to peer tutoring done by a student, selected by the guidance counselor, who has the ability, interest and time to tutor. Although this approach is very structured, it can be modified to coincide with available resources.

The materials in this chapter have been adapted from *Individually Guided Motivation*, Wisconsin Research and Development Center for Cognitive Learning, Madison Wisconsin, 1974.

Introduction

A peer tutoring program can facilitate the individualizing of instruction. Tutoring might focus on reading aloud, recording dictated responses, assisting with spelling and proofreading on written assignments, providing drill and repetition, motivating unmotivated students, changing behaviors and attitudes, and increasing appropriate social interactions. Tutoring might focus on cognitive or affective gains or a combination of both.

Peer tutoring can be implemented by a single teacher, or on a larger scale by an entire school or district, and it is economically feasible. The following guidelines give specific examples of how a peer tutoring program can be organized. The guidelines cover recruitment of tutors, tips on selecting tutors, scheduling tutorial sessions, training tutors, implementation, and program evaluation.

A. Recruitment of Tutors

The peer tutoring recruitment should be advertised via:

—periodic announcements over the public address system

—posters placed at various locations in school

—brochures and applications distributed to prospective tutors

—verbal recommendations to individual students by guidance counselors and subject matter teachers.

The peer tutoring program must be described to potential tutors emphasizing the one-to-one assistance. The program should not be described as remedial or diagnostic, or as being aimed at poorer students, or any other frame of reference that would make participation something to be avoided.

Other factors which should be described include training time, tutoring time and record keeping.

The tutoring tasks should not be made to sound more enjoyable than they can possibly be, such as, "the great joy and satisfaction that comes of helping others." Avoid such descriptions of the program.

The student should complete an application form. Important topics to include on the application are previous grades in content subjects, subject area interests, attendance record and subject matter teacher references. Recommendation forms should be sent to the subject matter teachers listed as references on the application.

Recruitment Letter

Date

Dear Student:

This letter is to tell you about the peer tutoring program at West High during the coming year. It will be under the co-direction of Sally Smith and Bob Johnson, resource teachers.

As supervisors of this program, we view this opportunity to tutor as having a twofold purpose. Primarily, we want to make help available for students that need assistance at West High so that they may maintain steady progress. Secondarily, we want to provide tutors with an opportunity for a working experience which may help them choose a future career.

To ensure success in such a program, certain requirements are necessary. The following will be required of each participant:

1. Commitment to tutor a specific student for at least one semester.
2. Attendance at four orientation sessions.
3. A 15-minute weekly conference with the supervising teacher to review progress of the tutoring sessions.

If you are interested in participating in this program, please fill out the application form and return it to Mrs. Jones in the Guidance Office by ________________.

Thank you.

Tutor Application

Name ______________________ Grade ______________________
Address ______________________ Homeroom ______________________
Phone Number ______________________ Counselor ______________________

1. Write a statement explaining why you want to tutor.

2. Check areas in which you are interested.

☐ Bookkeeping
☐ Typing
☐ History
☐ English
☐ Industrial Arts
☐ General Business
☐ Biology
☐ Physical Science
☐ Math

3. What subject do you like the most? ______________________
4. What subject do you like the least? ______________________
5. What are your hobbies or interests? ______________________
6. What is your grade point average? ______________________
7. What were your grades last year?

Science ______________________ Math ______________________
English ______________________ Social Studies ______________________
Industrial Arts ______________________

8. How many days were you absent last year? ______________________
9. List three teachers for references. ______________________
____
10. List previous employment or present job(s). ______________________
11. Fill in your daily schedule for this semester.

Period	Subject	Room	Teacher
Period 1			
Period 2			
Period 3			
Period 4			
Period 5			
Period 6			

12. When would you be available for tutoring? ______________________
Before School ______________________
1st Period ______________________
2nd Period ______________________
3rd Period ______________________
4th Period ______________________
5th Period ______________________
6th Period ______________________
After School ______________________

Return Date: ______________________

Return to: ______________________ Room ______________________

Tutor Recommendation

______________ has applied for the peer tutoring program. As a part of the selection procedure, subject matter teachers' comments and evaluations are very helpful.

Thank you for your assistance.

Please rate the student on the following characteristics:
(Circle one)

1.	Attendance in class	5	4	3	2	1
2.	Attitude about learning new things	5	4	3	2	1
3.	Initiative with limited supervision	5	4	3	2	1
4.	Ability to follow directions	5	4	3	2	1
5.	Ability to relate to other students	5	4	3	2	1
6.	Responsibility	5	4	3	2	1
7.	Completion of coursework	5	4	3	2	1

Comments:

Date ________ Signature of Evaluator ______________________

Tutor Contract

I, ____________, agree to participate in the Peer Tutoring Program at West High for the duration of this semester. The student I will be tutoring ______________ times a week is ______________. It is my understanding that assistance is needed for this individual through direct tutoring which I will be providing. I will attend a weekly conference to evaluate the tutoring sessions with the supervisors of this program.

Date ______________________

Student Signature ______________________

Supervisor Signature ______________________

B. Tips on Selecting Tutors

1. A tutor need not be a straight "A" student. The student should be functioning successfully in the content subjects.

2. The tutor should have completed the course(s) he/she will be tutoring.

3. A tutor must have an excellent attendance record.

4. A tutor should be self-directed, able to work independently, be fairly mature in actions, and able to get along well with others.

5. A tutor should have good organizational skills.

6. Students should maintain the following standards:

   a. Supervision—Peer tutors will follow the assignment provided by the supervising teacher.

   b. Limits—Peer tutors must report to the supervising teacher if they observe discipline, motivation or personal problems with the tutee. The tutee may try to solicit a "promise" from the peer tutor that information is not to be repeated to others.

   c. Model Appropriate Behaviors—In dealing with various students, peer tutors must present themselves as models of appropriate behavior. Peer tutors must support school rules, maintain themselves in an appropriate manner in school, and serve as positive role models to others. Those who cannot maintain these standards should be excluded from the program.

   d. Confidentiality—Information learned about students during training and tutoring is strictly confidential. Repeating any such information is prohibited. Confidentiality is vital in maintaining a tutoring relationship.

7. Match tutor-tutee teams by considering sex, personalities, and available time for participation.

C. Scheduling Tutorial Sessions

1. The location for each tutorial session should be the same for each tutor-tutee team.

2. For convenience of class scheduling, teams must have the same free class period or be able to schedule time 40 minutes before or after school daily.

3. Because the tutors and tutees have to talk to each other and will have difficulty whispering or talking softly, only a few teams should be assigned to a room and these should be widely separated. Up to six teams may be assigned to work in the same medium-sized classroom, although students may require a few sessions to adjust to the distracting discussions going on around them.

D. Training Tutors

In addition to matching tutors and tutees, tutors must be trained. The preparation should include an explanation of the role of the tutor, the procedures to follow in tutoring and implementation of the tutoring sessions.

Outline of Training Sessions

Training sessions might be held twice a week for two weeks at the beginning of each semester. Students could sign up for one of the groups scheduled during lunch hours or after school.

Session #1	What is peer tutoring How to use various forms for tutoring sessions
Session #2	Teaching techniques: Giving directions Reading a chapter aloud Teaching vocabulary words Questioning Review and drill
Session #3	Behavior management principles Reinforcement
Session #4	How to conduct a lesson Role playing tutorial sessions

Session #1

Begin training tutors by delineating their role. Frequently, tutors feel that the primary objective of a tutoring session is task completion rather than review or problem solving. In such instances, the tutor may complete the assigned work for the tutee instead of working through the assignment with the tutee. As a facilitator of learning, the tutor's role needs to be specified, and the need for the tutee to do his or her own work should be explained.

In addition to delineating the tutor's role, you should explain the exact procedures to be followed in a tutoring session. A highly structured tutoring program as one in which the content, sequence and procedure for each lesson are clearly outlined.

The procedures for conducting peer tutoring sessions can be divided into three phases. First, the tutor must prepare for the session. Second, he or she must know how to conduct the session. Finally, the tutor must know what to do after the session.

The tutor prepares for a tutoring session by getting the assignment and making sure he or she understands the material. A simple form may be used in making tutoring session assignments.

The tutor should know where the assignment sheet is kept, and where the supplies, tests and equipment needed for the sessions are kept and how to use them. For most tutors, the equipment will include little more than pencils, worksheets and textbooks. However, if tape recorders, film projectors and other such equipment will be used in the session, proper operation and maintenance techniques should be discussed. The tutor should be able to get the assignment and prepare for a tutoring session unassisted. Preparation for a tutoring session should include assembling all materials to be used in the session. Make sure tutors are aware which materials or areas, if any, are off limits. For example, problems could be avoided by letting tutors know in advance that the teacher's desk is for the teacher only, if that is the case.

What is Peer Tutoring? Peer tutoring is a way of providing individualized instruction by using another student as a resource person. The subject areas may include English, science, math, history, economics, government, home economics, industrial arts, business and foreign languages. The students work together on a one-to-one basis during regularly scheduled sessions under the guidance of the supervising teacher.

The tutor is a student who serves as the teacher. His or her role is to present the task to the tutee, to respond immediately to the student's answer, to model the correct answer or give clues for finding the answer and to review.

The tutor must assume a leadership role in the tutoring sessions. Part of this leadership role will be modeling the ability to work in unsupervised settings and to follow directions. In addition, a tutor will model such behaviors as staying on task and completing assigned tasks.

(Discuss the role of the resource program and how the tutoring program will help meet its goals and objectives. Discuss what it is like to be a poor reader. Tell the tutors a little about what to expect the tutees to be able to do and not be able to do.)

Guidelines for Tutoring

Call in advance if tardiness or absence is anticipated.

Sign in and out of the tutoring room each time.

Check the assignment to be sure you understand the task before beginning to tutor.

Get out all materials to be used.

Orient the tutee to the objectives of the lesson.

Help the tutee but don't do the work for him or her.

Positively reinforce correct answers.

Do not try to handle discipline problems. Consult the teacher if such problems arise.

Stay on task and pace the lesson at a reasonable speed.

Summarize any oral work on the Daily Record Sheet.

Turn in written work accomplished during the tutoring session.

Accurately record written work completed on the Daily Record Sheet.

Clean up the tutoring area and replace material used.

Develop a positive relationship with the tutee.

Understand the need to build the self-image of the tutee.

Forms to Use

Discuss the use of:

1. The Tutor Sign-In Sheet—Tell tutors its location. Discuss room assignments for tutoring.

2. Assignment Sheet—Tell tutors its location, how to collect the necessary materials for the session. During the training sessions, tutors should be given a set of dummy materials. Let them examine the materials and the assignment sheet. Describe the procedures for returning materials after each tutoring session.

3. Daily Record Sheet—The return procedures should include completing the entry on the Daily Record Sheet, as well as being shown the place to return all materials and forms.

4. Daily Tutor Checklist—Tutors may choose to use a Daily Tutor Checklist for the first week or two to help them remember what to do.

5. Weekly Behavior Evaluation—The tutor should complete the Weekly Behavior Evaluation form before each weekly conference with the supervising teacher. Problems identified on it can be discussed during the conference.

Tutor Sign-In Sheet - Example

Name	Date	Time

Assignment Sheet - Example

Date	Assignment	Materials to Use	Directions

Daily Record Sheet - Example

Date	Description of Assignments Completed	Evaluation Comments

Daily Tutor Checklist - Example

Name of Tutor ______________________ Date ______________________

Directions: When you finish a tutoring session, check yourself to see if you remembered to do each thing listed below. Put a checkmark under Yes if you did the thing mentioned. Put a checkmark under No if you did not do the thing mentioned.

	Steps in Tutoring	Yes	No
1.	I was on time for the tutoring session.	____	____
2.	I was prepared with the materials needed.	____	____
3.	I sat beside the tutee rather than in front of him/her.	____	____
4.	I greeted the tutee pleasantly to start the session and talked with him/her about something he/she was interested in.	____	____
5.	I discussed with the tutee what he/she studied or practice that day.	____	____
6.	I looked at the tutee when either of us spoke.	____	____
7.	I spoke slowly and clearly.	____	____
8.	I waited for the tutee to answer each question asked or complete each exercise given.	____	____
9.	For every correct and complete answer, I told the tutee his/her answer was correct.	____	____
10.	I praised the tutee when he/she gave correct answers.	____	____
11.	I praised the tutee for trying.	____	____
12.	I corrected the tutee's wrong or incomplete answers; I did not pass over them.	____	____
13.	I set a good example for the tutee by paying attention to the work and showing him/her that I liked the subject matter.	____	____
14.	I was pleasant and tried to be helpful throughout the session, especially when the tutee did not seem to learn or understand.	____	____
15.	Near the end of the session, I reviewed with the tutee what he/she had learned and praised him/her for having worked hard and learned.	____	____
16.	I told the tutee when and where we will meet for the next session.	____	____

Weekly Behavior Evaluation - Example
(to be filled out by tutor on each Friday)

Name of Tutee ______________________

Behaviors to be Evaluated	Date		Date		Date	
	Needs Improvement	Satisfactory	Needs Improvement	Satisfactory	Needs Improvement	Satisfactory
a. Behaviors related to attitudes and achievement in the subject matter of the tutoring: 1. The tutee expresses pleasant feelings about the subject matter.						
2. The tutee works persistently in the subject matter.						
3. The tutee works independently in the subject matter.						
4. The tutee works on the subject matter at other than regularly scheduled times.						
5. The tutee attains concepts and skills of the subject matter well.						
6. The tutee scores well on published or teacher-made tests.						
7. The tutee performs class activities well in the subject matter.						
8. The tutee works outside school hours in the subject matter.						
b. Behaviors related to motivation and self-direction during the tutoring sessions: 1. The tutee comes to the tutoring session on time.						
2. The tutee pays attention to the tutor and the work to be done.						
3. The tutee brings any materials he/she needs to the tutoring session.						
4. The tutee continues to work during each session.						

Session #2

A tutor should also be acquainted with the procedures for conducting a tutoring session. This may include:
—how to give simple, easy-to-follow directions
—how to relate the topic of the tutoring session to other meaningful information
—how to give encouragement and reinforcement for correct responses
—types of activities to be included in a session.

Teaching Techniques

Giving Directions

1. State the goals for each session in small steps.
2. Involve the tutee in setting the pace for each session. For instance, the tutee may want to do more work than planned or do it in a different way part of the time.
3. List the steps in sequence.
   "First, do __________. Second, do __________.
4. Limit the number of directions given at one time. Give no more than three directions.
5. Use visual and auditory inputs. Write the directions as well as telling them.
6. Show examples. Let the student know how he or she is to respond. Write the vocabulary word on the paper and demonstrate if the meaning is to be written in a complete sentence or as a simple phrase.
7. Use eye contact. Direct eye contact is needed to assist the student in concentrating on the directions being given.
8. Ask the student to repeat the directions.

Reading Chapters Aloud to the Tutee

1. Give an introduction

An introduction to the reading assignment should be given before starting to read. The tutor may say, "Before reading Chapter 3, let's review the chapter to get an idea of what it will be about." At this point, the tutor can take the student through an overview of the chapter by requiring the student to follow along. This introduction provides a structure to relate the new materials to what the tutee already knows and thus facilitates comprehension. Preparatory questions can be used to stimulate curiosity and motivation when surveying the chapter. Discuss vocabulary words to provide concrete examples of abstract terms.

2. Point out organizational patterns and graphic aids

a. The tutor should read and indicate titles and headings to help demonstrate organization of the material and to facilitate following along. "The chapter title is ______________________________."

b. The tutor should differentiate between main ideas and supportive material within the chapter.

c. The tutor should discuss the content in graphs or tables and point out how a particular table is presenting ideas contained in three pages of text.

d. The tutor may summarize, paraphrase or explain difficult portions of the chapter.

e. The tutor should repeat key concepts or ideas to help the student understand the importance of that section or sentence.

3. Summarizing the material

In addition to understanding what is read, the student will be expected to remember important facts and relationships. In order to develop this, the session should end with a summary and review of key content questions designed to facilitate recall and analysis.

Teaching Vocabulary Words

1. Place the new word in a sentence on the board. Read the sentence aloud.
2. Isolate the word. Then break the word into logical parts. Have students:
   a. look at the word;
   b. say the word;
   c. write the word as they say it aloud. Do this three times.
3. Explain the word's meaning as used in the sentence.
4. Ask students to write the word's meaning on their own paper.
5. Ask students to skim a specified page for the sentence using the new word. Ask students to read the sentence aloud. Discuss the word's meaning in the textbook sentence.
6. Ask students for original sentences using the word. Share orally first. Then have students write their own sentences using the word.

Questioning

The tutor should not present information in declarative or explanatory form, except in answer to a direct question by the tutee, to tell the tutee that he or she is correct or to praise the tutee. With those exceptions, the tutor should ask questions and not give direct information.

1. Asking questions as a method of prompting
When the tutee says that he or she does not understand a question, fact or concept, the tutor should attempt to clarify by asking questions that direct the tutee's attention to relevant and important parts of the question.

2. Redirection—Helping tutees arrive at answers rather than simply telling them answers
When the tutee gives an incorrect answer to a question

or makes an error in a sequence of steps leading to an answer or solution, the tutor should immediately ask the tutee to explain his or her answer or action, adding questions to direct attention to the sequence and to the available alternatives or usable, relevant information.

3. Asking questions as a method of determining what the tutee cannot do

When the tutee asks for assistance, the tutor should ask questions that will help him or her determine the kind of help the tutee needs. Then the tutor should ask questions that direct the tutee's attention to available sources of guidance, prompting or other information.

4. Rephrasing

When the tutor asks a question and the tutee responds by saying that he or she does not understand the question, the tutor should not explain the question and then ask it again. The tutor should rephrase the question, simplifying it and asking for a less complex response.

5. Demonstrating

If the tutor decides that a demonstration will be of value, he or she can perform the demonstration asking questions rather than providing explanations. Rather than telling the tutee what he or she is doing, the tutor should ask the tutee to either describe what he or she sees, predict what the tutor will do next, or to predict the consequences.

Review and Drill

1. Review the accomplishments of the previous lesson. "Yesterday, you studied the Tell me the meaning of ____________."
2. Help students practice the correct answers. Once the student has completed a series of three correct answers, move on to the next level or activity.
3. Provide several different ways to practice newly learned material.
    a. "Why don't animals in the tropics hibernate?"
    b. "What are the food requirements of hibernating animals?"
4. Provide for delayed recall.
   At the end of the 40-minute session, quiz the student about material discussed during the first half of the period.
5. Let the student know whether or not each practice response is correct as you go along. Check each answer on the worksheet before going on to the next one.

Appropriate Activities for Tutorial Sessions

1. Flashcard drill of content vocabulary words.
2. Review for tests or quizzes.
3. Work on homework assignments—worksheets, end-of-chapter questions, study guides.
4. Rehearsing a speech.
5. Orally reading a chapter from a text to the tutee.
6. Helping the tutee write a composition.
7. Helping the tutee write a research paper.
8. Helping the tutee proofread written assignments (spelling, capitalization, punctuation).
9. Practice of diction, pronunciation, etc., in foreign language.

Session #3

A significant part of the training should emphasize the need to reinforce appropriate responses by tutees. Stress the value of enthusiasm, motivation and concern for learning during the training period. Simulation exercises with other tutor trainees can be helpful in modeling positive performance.

Behavior Management Principles:
Reinforcement

Use non-verbal and verbal behavior as indicators of success.
Verbal

Correct Techniques	**Incorrect Techniques**
a. "Sure, I'll be glad to help you."	a. "Do I have to help you again?"
b. "I had trouble learning that too—it's hard until you catch on."	b. "You mean you don't know this? It's so easy."
c. "You got five right out of ten."	c. "You got seven WRONG out of ten."
d. "How did you get that answer? Here, let's see if we can figure it out."	d. "This is all wrong. Here, let me do it for you."
e. "You know your seven tables perfectly. That's great."	e. "You still don't know all of your multiplication tables."

Non-Verbal

a. Paper or book in front of learning student (tutee)	a. Paper or book in front of teaching student (tutor)
b. Smile, look interested	b. Sigh, make faces, look bored
c. Give the tutee full attention	c. Look around the room or start doing your own homework

Praise the tutee when a correct response is given.

When confirming the correct responses, the tutor should always identify the response as correct in a completely unambiguous manner. The tutor should avoid simply rushing on to the next problem saying only, "O.K., now look at this next question." After a brief pause, it is then appropriate to move on to the next problem.

Praise should be given for a series of correct responses or for continued attention and cooperation.

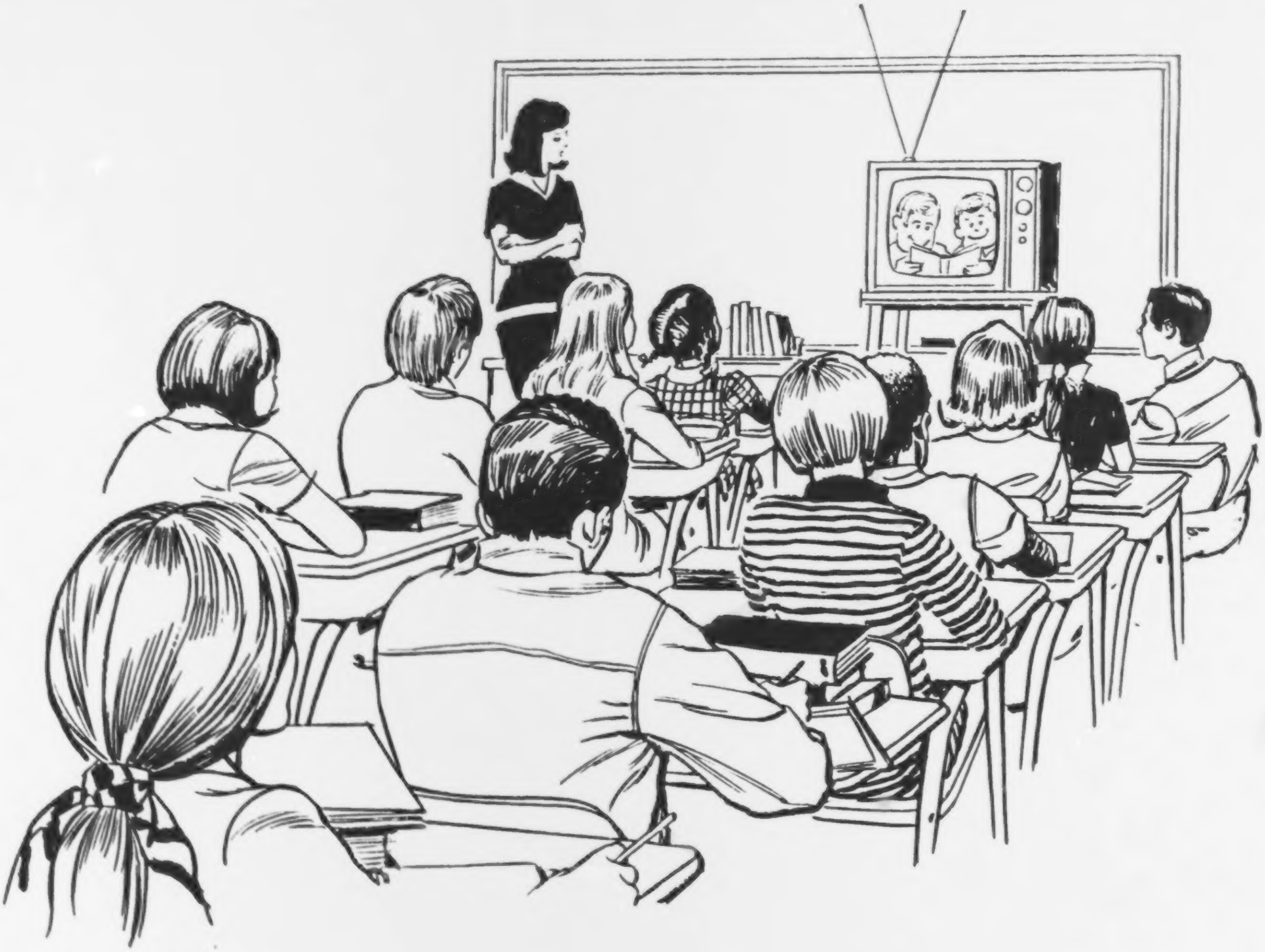
In addition to statements identifying correct responses, including such expressions as "very good," the tutor should provide praise in more specific form—e.g., "You are doing very well; you got that whole series right," after an especially complex correct response or series of responses or after the tutee has worked hard for a period of time.

Praise given without any obvious relationship to the tutee's responses or activities is worth little.

Praise should not be "given away for nothing"; it should be contingent on correct responses or hard work.

Praise should be presented quietly, with a smile, and without "gushing" or overstatement.

The tutor should never let the tutee see signs of impatience, frustration, annoyance, or any indication that can be interpreted as disapproval. The tutor should always be friendly and supportive. This means that the tutor must be careful not to frown. Although a frown might mean only that the tutor is thinking or concentrating on a problem, a slightly insecure or intimidated tutee is likely to interpret the frown as indicating anger, dislike or disapproval. The tutor should smile frequently, and the level of conversation should be friendly and personal in tone.



Session #4

How to Conduct a Lesson

Tell the tutors how the initial meetings are to take place. Describe some general kinds of conversational questions that the tutors could use to put the tutees at ease. Tutors may choose to use the Get Acquainted Questionnaire. Tell the tutors the obvious—smile frequently, be pleasant, talk with the tutee as a friend rather than as a superior, and try to avoid expressing any impatience or annoyance when the tutee makes an error or when progress appears to have stopped.

At the beginning and the end of each tutoring session, the tutor should engage the tutee in conversation aimed at finding out what the tutee enjoys doing, what he or she is thinking about, and so on.

Using the Tutoring Observation Form, tutors should view a videotape of the teacher simulating a tutorial situation. The videotape is recommended because it allows for replay and discussion.

Then assign the tutors in pairs to role-play a tutorial session using real materials and following an Assignment Sheet. Observers may be used in this training activity.

The tutor should also know what to do when the tutoring session ends. This includes returning all materials and equipment to the appropriate places and providing the teacher with information about progress made during the session. This may include a brief narrative written by the tutor, a checklist or a file of the written work which was attempted or completed. At a minimum, a biweekly conference should be held to discuss the progress of the tutoring sessions.

Regardless of the progress-reporting technique selected, the tutor should know what to include and when and where to put the report. If the report consists only of the written assignment, the tutor should know where to put it. If the report is a written narrative, the tutor should know when to write the report, the types of information to include, and where to put the report. If the report is to be an individual conference, the tutor should know when the conference will be held.

Get Acquainted Questionnaire

(Tutors should fill in answers to all questions at the beginning session.)

Tell your name. Tell why you are doing this. Make the student feel comfortable. Ask for his or her help.

1. What is your full name?
2. How old are you?
3. How many sisters and brothers do you have? What are their names? How old are they?
4. Do you have any pets? What kinds?
5. What is your favorite TV program?
6. What do you like to do in school?
7. What do you dislike doing in school?
8. Do you have a part-time job? If so, what? How much do you work?
9. Who are your best friends in school?
10. How do you feel about school?
11. What is the most important thing you are going to do after school today?

Tutoring Observation Form

Name

1. Tutor/Student Relationship:
2. Motivation:
3. Materials:
4. Student's Response:
5. Attention Span:
6. General Observation:
7. Questions:

E. Implementation

The first meeting between a tutor and his or her tutee is critical. The tutors should not all be assigned to begin tutoring on the same day. If possible, schedule only the number of tutors that one teacher can observe. This teacher should not participate, but simply observe.

The tutors should have been told, during the final training session, to concentrate on conversation and learning about their tutees during this first meeting. Toward the end of the meeting, the tutor should do some tutoring, using the procedures and following the rules that he or she has learned. After the tutoring session, the observing teacher and the tutors should discuss the session, and the teacher can provide brief feedback.

A meeting of the supervising teacher and the tutors should be held at the end of the first week or whenever it can be arranged. The tutors should be encouraged to share their experiences, discuss them, ask questions, identify problems and seek help with problems.

Agenda: What happened at your first tutoring session?
How did you make learning interesting?
Did you have problems? How did you handle them?
Did anyone have a suggestion for solving this problem?

During the first few days or weeks, expect some confusion and unanticipated problems. Whatever the problem, do everything possible to avoid cancelling tutoring sessions. The supervising teacher involved in preparing study materials, practice exercises or test preparation needs to stay ahead of the tutoring schedule.

Don't overlook the tutors. If the tutoring activity appears to take more time than a tutor can spare from his or her own school work, reduce or terminate the involvement.

The initial assignment of tutor and tutee should not be considered permanent. If a tutor is not effective and critiques and other feedback do not correct the problem, he or she should be relieved of the tutoring assignment. There are many possible reasons why a particular tutor-tutee pairing might prove unsatisfactory. The tutor and tutee might "bug each other" in many ways. Sometimes tutor-tutee teams should be boy-boy or girl-girl instead of opposite sex, which might be causing problems of communication and rapport.

Occasionally a supervising teacher observes a tutor giving incorrect information. Two procedures are recommended when this occurs. Don't interrupt to correct the error. After the session ends, discuss the error with the tutor and direct him or her to go immediately—if possible—to the tutee to correct the error. This avoids undermining the confidence the tutee has developed in the tutor.

The second step is to evaluate the tutor's competence in the subject in relation to the study materials to be used by the tutee in the following weeks. If the subject is one in which retention of rote memory items (names, dates, etc.) is involved, it is possible that some of the tutors have already forgotten that information and those associations. The scoring keys and written outlines of the answers provided by the supervising teacher should be designed to solve this problem.

F. Program Evaluation

Evaluation of peer tutoring programs is necessary to demonstrate their efficacy in terms of the goals stated. Data collection is vital to support the technique and for improvement in the future. Elaborate research programs need not be set up, but it is important to have objective data concerning the operation of the program.

Some questions that should be answered in evaluating a program are:

1. How did the peer tutoring sessions meet the objectives?
2. Were the materials adequate for the tutee's need? Could other materials be more effective? If so, which ones?
3. Was the time involved adequate?
4. Was the student reporting of the sessions appropriate? If not, what changes could be made?

Tutors and tutees should complete a questionnaire about the program. Parents may also be included in a simple opinion questionnaire concerning the value of the program.

Tutor Attitude Scale

		Strongly Agree	Agree	Slightly Agree	Disagree	Strongly Disagree
1.	The experience reinforced my feelings that I would enjoy teaching.	1	2	3	4	5
2.	The experience taught me that I can teach.	1	2	3	4	5
3.	The experience taught me that I can work successfully with people.	1	2	3	4	5
4.	The experience showed me that I enjoy helping others.	1	2	3	4	5
5.	The experience indicated that I can build a good relationship with a student.	1	2	3	4	5
6.	The experience indicated that students related well to me.	1	2	3	4	5
7.	The student that I tutored acted enthusiastic about working with me.	1	2	3	4	5
8.	I feel that the teachers and consulting teachers were supportive of my efforts.	1	2	3	4	5
9.	I feel that the time I put into this experience was valuable.	1	2	3	4	5
10.	I fulfilled my contract by tutoring regularly and attending required meetings with the supervising teacher.	1	2	3	4	5
11.	If given the chance, I would tutor again.	1	2	3	4	5
12.	I would recommend this experience to others.	1	2	3	4	5

Please comment on the program. What did you like? What didn't you like? How could the program be improved for next year?

Name ______________________________ Date ________________

Tutor Questionnaire

1. Were you given enough training to be a good tutor? **Yes** **Not Sure** **No**

2. How do you get along with the student you tutor? **Good** **Fair** **Poor**

3. How do you get along with the teachers supervising the tutoring? **Good** **Fair** **Poor**

4. Has tutoring helped you in school? **Yes** **Not Sure** **No**

5. Have you helped the student you tutor in his or her school work? **Yes** **Not Sure** **No**

6. Overall, how do you feel about tutoring? **Good** **Bad** **OK**

7. What is the thing you like best about tutoring? ______________________________

8. What is the thing you like least about tutoring? ______________________________

9. How do you rate these parts of the program?

	Good	**Bad**	**Indifferent**
Drill with flash cards	____	____	____
Reading to the tutee	____	____	____
Worksheet exercises	____	____	____
Explaining lessons	____	____	____
Doing homework assignments	____	____	____
Working on projects, speeches	____	____	____
Reviewing for tests	____	____	____

10. What suggestions do you have to improve the tutoring program?

Name ______________________ Date ______________

Tutee Questionnaire

1. How do you get along with your tutor? **Good** **Fair** **Poor**

2. Has tutoring helped you in school? **Yes** **Not Sure** **No**

3. Do you like being tutored? **I like it** **Not Sure** **I don't like it**

4. What is the thing you like best about tutoring? ____________________

5. What is the thing you like least about tutoring? ____________________

6. How do you rate these parts of the program? ____________________

	Good	**Bad**	**Indifferent**
Drill with flash cards	____	____	____
Tutor reading aloud	____	____	____
Worksheet exercises	____	____	____
Tutor explaining lessons	____	____	____
Doing homework assignments	____	____	____
Working on projects, speeches	____	____	____
Reviewing for tests	____	____	____

7. What suggestions do you have to improve the tutoring program?

8. What do you like best about your tutor?

Name ____________________ Date ____________________

Conclusion

The efficacy of peer tutoring as an instructional strategy for special education students is supported in the literature and by students and educators who have participated in these programs. The special needs and learning styles of resource students necessitate the use of a variety of innovative and creative methods to enhance learning. Peer tutoring is a valuable addition to the repertoire of techniques which can be used to meet these special needs.

Once peer tutoring is initiated in a school, it will multiply the amount of direct instructional time available. For students enrolled in a special education program, peer tutoring may provide the necessary involvement to help them experience success and acceptance in the regular classroom. Peer tutoring may also be a way to serve students on waiting lists for special programs. Also, phasing students out of resource rooms is often a problem. Peer tutoring can provide a student support program while reducing professional intervention and encouraging independent functioning in the mainstream.

School budgets, already strained by rising costs, can rarely be stretched to provide paraprofessionals or teacher aides. Student tutors are a promising resource as they are capable of handling many of the clerical duties as well as tutorial functions. Peer tutoring simply mobilizes a resource already in abundant supply in the school.

The tutorial procedures and the tutor training procedures described can also be used by others. Student teachers, senior citizen volunteers and parent volunteers can use the same techniques to tutor.

The supervising teacher must be willing to spend time planning and monitoring peer teaching activities and providing adequate training. The supervising teacher must be well organized to provide explicit assignments each day for the tutors. Good planning and organization will facilitate an efficient, effective program.

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Chapter 9

Grading

> The fact that our lives are determined by the forces of life, is only one side of the truth; the other is that we determine these forces as our fate.
>
> *Ludwig Binswanger*

Chapter 9

Grading

Just as handicapped students have individual instructional needs, there is sometimes a need to change your grading procedures to reflect their special abilities. This chapter presents some materials to help you grade handicapped students.

The first resource is an article by Stanley Vasa, reprinted with permission from *Education Unlimited*, January-February 1981.

Alternative Procedures for Grading Handicapped Students in the Secondary Schools

by Stanley F. Vasa

Education Unlimited, January-February 1981.

....the subject of grading is laden with prejudices, dogmas and unfounded opinions, and for many years it has tended to provoke very unscholarly pronouncements (Milton & Edgerly, 1977).

Public Law 94-142 has led the way in advocating the development of individualized instructional systems for the mildly handicapped student. Traditional grading and reporting systems do not adequately reflect this philosophy or intent. The traditional system of comparing the individual with the rest of the class is no longer appropriate. In the case of the identified mildly handicapped student, there is little merit in verifying that the student does not perform as well as the other students on traditional tests or in traditional classrooms. New systems of grading need to incorporate a recognition of individual differences in intellectual ability and learning strengths. Grades must begin to provide more descriptive information by showing individual student gains and identifying specific needs for improvement.

In order to be more adequate, grades should provide a reporting method which is of a descriptive nature about the student's relative achievement. Some of the ideal functions to be addressed by grading and reporting systems are:

- the student's current level of performance;
- the student's readiness for future units of instruction;
- the quality of the student's performance compared to others;
- the effort put forth by the student;
- the student's ability to relate and work with others; and
- the relative improvement of the student's performance compared to past records.

When compared to this standard, traditional systems are often found wanting. This article will explore current grading practices, purposes of grading, issues concerning grades, alternative systems and suggestions for implementing those alternatives. It is hoped that as educators objectively view traditional grading systems informed changes will occur.

Current Practices

Presently, there are many different types of grading practices employed in the secondary schools. In an information survey, 30 different grading practices or variations of grading practices were found to be employed at the junior-senior high school level (Vasa, 1979). The practices ranged from the traditional letter grades to written letters to parents and "gentlemen" agreements between the resource teacher and the classroom teachers. The number of variations in grading practices point out the difficulty in providing specific direction on the best grading and reporting procedure to utilize. Six of the most common grading and reporting practices used in the secondary school are given in Table 1.

Purposes of Grading

Some of the controversy surrounding current grading practices is summarized in the statement from the National School Public Relations Association:

> If the purpose is to give the school administrative office a convenient way to sort out those students who should receive promotions, honors, scholarships and valedictories—grading

Table 1

Six Common Grading Practices in the Secondary Schools

Grading Practice	Description
Letter or Numerical	traditional system of giving the student a mark of A, B, C, D and F or 1, 2, 3, 4 and 5 to demonstrate relative level of performance on unit or course of study
Pass/Fail-Credit/No Credit	criterion-based measurement system which permits the individual teacher to indicate that the student has either met or not met previously determined standards
Checklists	criterion-based measurement system which has the instructor check student's progress against a predetermined list of needed skills or completion of specific tasks
Contracts	student and teacher agree to assign a mark based on predetermined goals and objectives which the student will reach during the instructional period. The goals may be written in conjunction with the special education teacher/consultant
Letter to Parents	a written report provided to the student or parents to give narrative information about the student's performance
Blanket Grades	all students receive a predetermined grade at the end of the marking period

> works well.
>
> If the purpose is to decide who should go to college and to help college admission officers select candidates for their freshman classes—grading also works well.
>
> If the purpose is to communicate with the parent, giving information about the child's progress and asking for help in overcoming problems—grading could stand improvement.
>
> If the purpose is to motivate the student toward intensive learning—grading often doesn't work well at all. (*Grading and Reporting*, 1972, p. 9)

Teachers face the problem each reporting period of what would be a fair and equitable way to mark the performance of a student who seems to try but just doesn't perform as well as is expected. The problem for the vocational teacher or content-area teacher is magnified by the concern about standards and providing an accurate picture of the student's performance in the "work world." All conscientious secondary teachers who have been involved in the grading process have spent countless hours trying to determine whether a student should be passed or failed on a specific assignment or course. Their concerns range from:

- upholding the standards of the school;
- maintaining their integrity with their fellow teachers;
- being honest with the student;
- justifying the grades with other students;
- motivating the student for better performance in the future;
- communicating accurately to the next teacher; and

Table 2
Purposes for Grading and Marking

Administrative Functions
to indicate whether a student has passed or failed
to indicate whether a student should be promoted or not
to indicate whether a student should graduate or not
to be used by employers in evaluating prospective employees
to transmit information from one school district to another
to consolidate records of students' learning and work done so far
to enable a course to be evaluated
to give schools public accountability
to provide the public with a guarantee of competence
to provide college admission departments with patterns of student performance

Student Functions
to give students a reward and sense of achievement
to give students feedback on progress
to motivate students
to give students experience of competition
to test ability to stand up to stress and pressure
to give students experience of real-life situations
to prepare students for a stratified society
to test performance in real life

Teacher Functions
to evaluate students' progress during the course
to assess amount of effort put in by the student
to give feedback on teaching
to grade in relation to other students
to grade in relation to criteria of excellence
to maintain standards
to maintain staff authority over students

Guidance Functions
to assist personal development of student
to predict future performance
to provide for screening of candidates for occupations and schools
to stimulate students to greater efforts
to determine the number of courses in which a student should enroll
to decide on the advisability for enrolling in other courses
to permit participation in school activities, play on teams, and win scholarships
to preserve the existing structure of society

Parent Functions
to give parents feedback on student progress
to provide parents with information about appropriateness of course placement
to provide parents with a means of evaluating the success of the IEP
to provide parents with information to report to their friends on the student's performance

- avoiding the reputation of being an easy teacher.

The dilemma of grading is complicated by expectations placed on teachers by others. Administrators, parents, special educators, college admission personnel and employers all send mixed messages about the purposes of grades. The purposes provided in Table 2 represent only a sample of the possible reasons for the use of grades in public schools. Some of the reasons may seem to be "tongue in cheek"; however, they need to be considered. The dilemma cannot be resolved without considerable evaluation of: (1) Why am I grading and reporting student progress? (2) Who cares about the relative performance of the student? and (3) How will others use the grade results?

The only agencies which regularly ask schools about the class rank of program graduates are colleges and vocational/technical schools. Generally, other agencies only want to know if the student has completed a program. They are more concerned about the student's ability to relate to others and to work in a cooperative environment. Graduation from a school program does not necessarily mean a certain level of competence is guaranteed by the public schools. If we accept the contention that the agency most concerned about students' comparative performance is the school, we may be able to avoid the over concern associated with the marking of handicapped students enrolled in the regular classroom.

Issues in Grading

Determining Grades. One of the problems commonly cited in the use of traditional grading procedures is how the marks are determined. In many of the academic courses of study in the secondary schools, a majority of the grade or rank in the class is determined on written tests and written work. The mildly handicapped student may often have extreme difficulty in completing written tasks. Written tests and written work may not, therefore, adequately reflect that student's knowledge level. Teachers need to examine very carefully what procedures should be used in determining the appropriate grade or mark. Alternative or supplementary ways of evaluating and reporting student progress could include the use of other measurement devices. For example the teacher might use some or all of the methods listed below:

- class interaction and discussion;
- class projects;
- papers;
- verbal reports;
- student interviews;
- anecdotal records of student performance;
- daily logs of student activities;
- files maintained on the student;
- modified tests—verbal, performance, shortened;
- and checklists.

By the utilization of some of the above techniques, the teacher may not need to make modifications in the grade reporting system for the mildly handicapped student. Instead, the strategy might be to employ alternative ways of assessing the student's progress toward the course objectives. For example, a student who has a severe reading problem but is capable might be evaluated by oral tests. Other students may need to be evaluated on daily tasks and performance to provide a clearer picture of their progress in the course. In these cases, the classroom teacher would modify the evaluation procedures and not the progress reporting system.

Student Reactions. Many secondary teachers are concerned about the reactions of other students when a modified system is installed for individual students. The key to the success of the installation of the modified system is the attitude portrayed by the classroom teacher. If the teacher models a contemptuous attitude toward the adjustments or makes negative comments about the system, students will soon pick up this discontent on the part of the teacher and probably react accordingly. From the experience of the author, the teacher is advised to never discuss one student's performance with another student. The precedent for this opinion is contained in the code of ethics for teachers (National Education Association, 1963). It states that the professional should not discuss one student with another individual unless it serves the purpose of benefiting the student in question. The best response the teacher can make when a student questions the procedures or grading practices employed with another student is to state, "I do not discuss your grades or performance with other students, and I will not discuss the performance of other students with you. If you have questions or concerns about the methods being used to evaluate your performance, I would be pleased to discuss them with you." Students commonly seek to improve their status in classes by making unfair comparisons with other students.

The "Watered Down" Curriculum. Vocational teachers have often expressed a concern that they cannot vary the competencies for their respective courses for the mildly handicapped student. They argue that adjusting grading criteria provides an inaccurate representation of student skills. Further, that industry and business maintain standards which they expect of program graduates, therefore, allowing a student differential criteria for competencies would bring discredit to the institution's training program. This is a legitimate concern if the school's vocational program chooses to provide only a letter grade or a dichotomous grade and does not provide the potential employer with a list of skills or competencies completed by the student. The question should not be one of standards but rather reporting what skills the student has mastered. This problem can be resolved by the establishment of a competency checklist in a developmental sequence. If requested by the employer and approved by the student or his/her parents, a form containing information on the student's performance could be forwarded at the time of employment.

The curriculum of the vocational programs or the content areas do not necessarily have to be "watered down" because mildly handicapped students are enrolled. Instead, the instructional and evaluation procedures may need to be redesigned to more accurately reflect the needs and knowledge of participating students.

Comparison Grading. One concern which has caused great controversy is the comparison of the mildly handicapped student's performance with the performance of other students in the class. John Holt (1970) states very eloquently that grades should be abolished because of their detrimental effect on learning. They foster unhealthy competitive attitudes in students, and they hurt self-esteem and create misleading expectancies about students' future school performance. These statements were not directed at the mildly handicapped but pertain to grading in general. Competition for grades benefits the small minority of students who end up as "winners." The vast majority of the students are confronted by frustration and humiliation. Millman (1970) suggests that criterion-reference grading and the use of the mastery report card would alleviate some of the inequities of current grading practices. All in all, there is a great concern about how student performance in the classroom should be evaluated and reported.

Alternative Grading Practices

In this section, four alternative or adjusted grading practices are presented: (1) contracts; (2) pass/fail systems; (3) letter or numerical grades; and (4) checklists. Each of these grading systems will be discussed in terms of their advantages, disadvantages, and suggestions for the implementation of the system.

Contracts

Contracting between the student and the teacher has been a common practice in many elective courses in the secondary school. The contract is merely an agreement between the classroom teacher and the student about the level of performance to be maintained in order to obtain a specific grade. The contract with mildly handicapped secondary students is frequently based upon the IEP written for the student. A good contract would include the following:

- types of work to be completed by the student;
- the quantity of work to be completed by the student;
- an agreement as to how the grade for the student will be determined;
- a statement of how the quality of the work will be determined;
- the signature of the involved parties, e.g., teacher, student, special education resource consultant, parent; and
- timelines for the completion of the work, when appropriate.

Advantages. Advantages to the utilization of the student contract form are summarized as:

- clearly identifies for the student what is expected;
- subjectivity on the part of the teacher is reduced because quality and quantity requirements are stated in advance;
- diversity of tasks and assignments is encouraged for students;
- competitive grades are discouraged because the criteria for grades is determined for the individual student;
- recognizes the ability of the student to participate in goal setting; and
- promotes better mental health in the classroom.

Disadvantages. Disadvantages commonly cited for the utilization of student contracts are:

- creates additional record keeping for the teacher;
- quantity of work rather than quality of work can be overemphasized;
- difficulty in finding creative ways to measure the student's performance; and
- differences predicated on lack of student and teacher agreement on assignments.

Implementation. The two most important criteria for a contract are: (1) should be written in simple and easy-to-understand language; and (2) provides for a commitment among participants. The teacher employing the contract as an alternative grading practice must be organized, goal directed, accountable and capable of task analyzing objectives. In addition, the contracting process requires skills in communicating and interpreting students' interests. The process of contracting involves a modified problem-solving approach on the part of the teacher and student.

In using the problem-solving model, the teacher needs to be clearly aware of the options which are acceptable for the student to demonstrate knowledge or competence in the classroom. In reviewing the student's strengths and weaknesses, the resulting contract could provide alternative strategies for the student mastering information in the course and alternative methods of evaluating the student's progress toward the stated objectives. The contract is one of the most widely used methods of accommodating the mildly handicapped student in the regular classroom. In some cases, the contract can be a "gentlemen's agreement" between the special education resource teacher and the regular classroom teacher on modifications needed for the course.

The major point to remember is that the contract should be written and agreed upon in advance of the instruction. A sample contract form utilizing a traditional letter grading system is presented in Figure 1.

Pass/Fail System

The pass/fail system of grading is one of the simplest to operate. In this model only the minimum competencies for the course or for individuals need to be determined. The successful completion of the minimum level or exceeding the minimum level permits the student to receive a grade of pass or "P." Students not reaching the minimum criteria fail or "F." The pass/fail grading system can be reviewed as part of the blanket grading system where all students receive a "P" or pass. The pass/fail system can also be viewed as a contract system in which the student meets the established criteria and receives a passing grade.

Advantages. Advantages of the pass/fail system are:

- less pressure placed on students for competition;
- less anxiety on the part of the students;
- cheating and "buttering up" the teacher are not needed;
- student knows what is expected and works toward a goal;
- student's achievement level can be increased or levels of aspiration can be increased;
- careful examination of the student's relative abilities and disabilities; and
- relieves the teacher of the responsibility of comparative evaluation of student's work.

Disadvantages. The following disadvantages for the utilization of the pass/fail system are noted by teachers:

- teacher may not provide corrective feedback in weak areas;
- passing grade is meaningless in distinguishing between students with differing abilities;
- some students do less work when freed of pressures for traditional grades;

Figure 1

Student Grade Contract

I, (name), agree to complete the following objectives and activities by (date).

1.
2.
3.
4.

(student's signature) (date)

I, (name), agree to award a grade of (grade) upon completion of all objectives and activities listed above, if completed by (date).

Monitoring System

	Date Started	Date Completed	Teacher Initial
Objective 1			
Activity 1.1			
Activity 1.2			
Objective 2			
Activity 2.1			
Activity 2.2			
Etc.			

- presents same pressures on students close to failing as the traditional grades; and
- minimum standards may be arbitrary and difficult to define.

Implementation. The pass/fail system does not require many modifications in present procedures on the part of the classroom teacher. The key is to establish the competencies for the course and to determine what each student should complete for a passing grade. The major concern is whether the student reaches the designated competencies or skill level rather than how has the student performed in comparison with other students. In adopting this system, the instructor still needs to utilize a number of different types of evaluation techniques to measure the student's progress toward the competencies.

In utilizing the pass/fail procedure, teachers more commonly rely on observational data about students rather than formal tests. The observational data would include: student performance on daily tasks, completion of assigned tasks, interviews with the student; and anecdotal records of student performance. The contract form in Figure 1 could be easily adapted to allow for its use with the pass/fail system of grading.

Letter or Numerical Grades

Letter or numerical grades in one form or another are the most widely employed reporting systems in use. These traditional grades have been utilized because they have relayed comparative information about students' performance to parents, other interested parties and students. Often, the information provided by this system may be inaccurate and distorted. By some schools' policies, teachers are locked into a grading system which requires them to utilize a range of grades from A to F or 1 through 5. When the teacher does not have the option of developing grade reporting procedures, he will need to adapt to the situation by modifying the measurement techniques used in determining the grades.

Advantages. Below are listed some of the advantages of the letter or numerical grade system.

- easy and convenient for use by the classroom teacher;
- readily accepted by most parents of high achieving students;
- fairly good predictor of future grades; and
- can be numerically converted to single score (GPA).

Disadvantages. Disadvantages of the letter or numerical grade system:

- meaning may vary between schools and individual classes;
- unusual combination of motivation, performance and achievement;
- provides for unfair competition for students;
- produces anxiety for students;
- probably does not relate to any future performance in the work world; and .
- teachers have a tendency not to use the whole scale.

Implementation. From a philosophical viewpoint, traditional numerical and letter grades are more harmful than helpful to the mildly handicapped student. In many secondary schools, however, teachers do not have the option to employ other methods of reporting student progress. In these schools, teachers need to decide what ways of modifying the measuring system exist for these students. Teachers may need to adjust the testing procedures and allow for greater use of other techniques of measurement, such as daily assignments, progress checklists, student interviews and class projects.

The essential ingredient in accommodating the mildly handicapped secondary student will be to establish criteria for the completion of work at relative standards (A, B, C, D, F), rather than basing the grades on a comparison. Again, the student contract form would be helpful in this arena.

Checklists

Competency checklists have been widely used in skill oriented courses and in developmentally sequenced academic courses, such as mathematics. The checklist provides for a guide to the individual student's progress toward goals stated in the instructional plan or individual educational plan. For example, in the vocational auto mechanics course, the teacher could break the learning units into small modules to permit easy assessment of skill acquisition.

Advantages. The checklist offers the following advantages:

- more value than a grade alone and helpful to the student;
- more meaningful to parents and future employers;
- gives more detailed information about the student's performance;
- can pinpoint weaknesses in the school instructional program;
- and skills may be prioritized.

Disadvantages. Disadvantages cited for the checklists are given below:

- may be time consuming for the teacher;
- increases the amount of paper work for the teacher;
- tasks and objectives may not be understood by parents;

- changes in instructional objectives can necessitate changing the reporting form; and
- written evaluation allows the teacher to be more subjective and checklists tend to focus on weaknesses.

Implications. The checklist is an excellent way for the teacher to indicate the progress a student has made during the course of instruction. The competencies for the checklist are derived from the course objectives. The checklist is written in competency form with an accompanying means of determining student mastery of each step in the attainment of the necessary skills. There needs to be a balance between detail and ease in use of the checklists. Generally, the more difficulty the student is having the more detailed the checklist needs to be.

An additional advantage of checklists is that they may be designed to allow varying mastery or application of each objective. The sample checklist shown in figure 2 illustrates the differentiation between basic competencies and advanced competencies. In this case the student was awarded a grade of "B" for demonstration of all basic competencies and a grade of "A" for demonstration of all basic and advanced competencies. Depending on school policy, progress may be translated into a letter or number grade or reported directly using the checklist.

Alternative Evaluation Practices

In grading students who are mildly handicapped, it is desirable to have a number of alternative ways of assessing the students' progress toward the intended objectives of the course. Most often student progress is measured by some type of testing procedure. Some of the points to remember in the process of developing testing procedures in the classroom are:

- a variety of options to match unique strengths and skills of students should be available;
- at least the same amount of feedback from tests and grades should be provided the mildly handicapped students as that for regular class students;
- a variety of measuring techniques for student skill attainment, e.g., class projects, class interaction, etc., should be available; and
- variation in the testing process should be provided, e.g., verbal, shortened, etc.

In monitoring the progress of the mildly handicapped student, the teacher may need to make more frequent and specific evaluations of the student's progress, perhaps on either a daily or weekly basis. The determination of grades on a daily or weekly basis can provide feedback for the instructor concerning the appropriateness of the instruction. This process, also, helps to both identify the student needs and motivate the student. Table 3 provides a suggested list of adaptive procedures for modifying the evaluation and testing procedures for the mildly handicapped secondary student.

Conclusion

This article has attempted to review the rationale and some options for modification of the traditional grading procedures in the schools. Several models for grading and reporting progress have been discussed. The purposes for grading practices should be clearly understood before a system is implemented. Teachers must be: (1) organized, (2) goal directed, (3) systematic, and (4) able to analyze objectives to develop appropriate means of measuring and recording student progress. In conclusion, school administrators, boards of education and teachers need to carefully review current grading and reporting practices. The author believes that through this careful review changes would occur in grading practices.

Figure 2

Sample Checklist

Objective: The student will be able to adjust carburetor linkage to manufacturer's specifications

(Sample)		
Competency	1-	Student has identified carburetor linkage parts
Basic	2-	Student is able to explain the function of the carburetor linkage
	3-	Student has adjusted sample linkage correctly.
	4-	Student can disassemble and assemble carburetor linkage parts.
Advanced	5-	Student can identify misaligned or broken linkage parts.
Competencies	6-	Student can adjust linkage on four different makes of automobiles.

Table 3
Alternative Methods of Assessing Student Progress

Types of Modification	Procedures
Verbal Tests	Administer test verbally by the teacher, paraprofessional, peer, or other to permit student to complete similar requirements
Shortened Test	Reduce the number of test items on a scale to permit additional time or remove items which require more abstract reasoning or have high difficulty level.
Levels of Questions	Use different levels of questions for different students - similar to shortened tests, but the items are written at a more concrete level.
Frequency of Tests	Utilize short written or verbal measures given on a frequent basis - daily or weekly - to assess student progress. This allows for more feedback on student progress.
Length of Time for Completion	Increase the amount of time a student has to complete the measure to allow for slower writing, reading and comprehension. Is important with many students.
Types of Responses	Provide for short answer or simple marking of correct response by the student. Measures should be matched to student's response strengths.
Verbal Review of Literature	Substitute verbal review of literature for testing. Have student review the course or unit content with teacher, paraprofessional, peer or resource teacher. This permits the student to present what they have learned and doesn't require that they be limited to test items.
Peer Tutoring	Include peer tutoring for teaching and testing purposes. Permits student to learn from their peers, who often present materials more clearly than the teacher. Does need to be monitored and the peer tutor should receive some basic training.
Development of Instructional Packet	Have student develop a packet to show knowledge and understanding of content of the unit. This shows what they believe is important.
Checklists	Use developmental checklists to permit the observation of student learning in a sequential and organized way that shows student progress. Checklists are good in academic-content courses and vocational courses. They permit the teacher to limit the number of formal tests.
Class Interaction	Assess student participation in discussion which indicates student mastery of content.
Course Projects	Measure progress toward final course product. In vocational classes, the standards may need to be altered when making comparison with other students.

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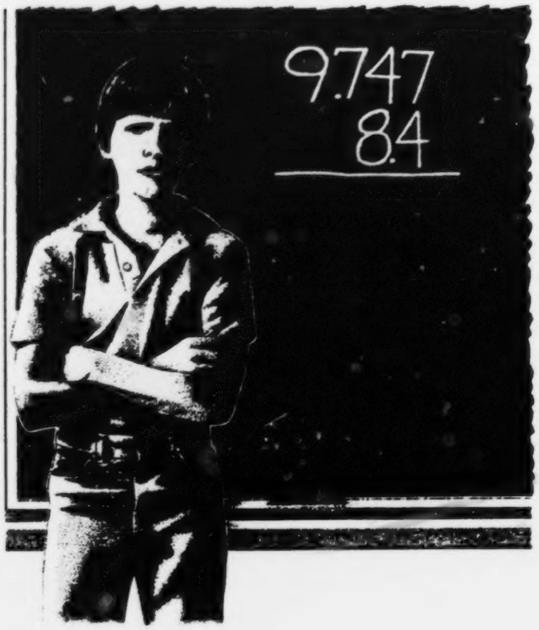


Informal Assessment

Goals

The goal of this section is to provide you with information to help you assess the abilities of your students. You'll become familiar with the following instruments used to assess entry level skills: pre-tests, cloze procedure, quick comprehension check, the Student Habit Observation Technique (SHOT), the reinforcement inventory and the observation checklist.

Rationale

The assessment of entry level skills provides the classroom teacher with important information for planning instructional programs. By determining what basic skills and abilities the student possesses, you can decide what to teach and what is the most effective method of teaching individual students.

Activities

Before using these assessment procedures, consult with the special education teacher, resource teacher or counselor in your building. Valuable information may be found in the student's file, preventing needless assessments on your part.

This section covers sources of information; guidelines to informal classroom assessment of skills (pre-tests); the cloze procedure, an assessment tool used to determine reading comprehension in subject matter areas at any grade level; the quick comprehension check, an informal method of determining whether a student comprehends the information in a text; the Student Habit Observation Technique (SHOT), which assesses student environmental stimuli and perceptual preferences; the reinforcement inventory, which measures what is reinforcing to a student; and the observation checklist, used to record student behaviors occurring in a specific instructional setting.

Sources of Information

Purpose

An important part of providing appropriate instruction for mildly handicapped students is matching instruction to their individual needs. The first step is to identify those individual needs. In most school systems there are a variety of information sources available to help teachers provide appropriate instruction. Here are several sources of information that may be beneficial to you.

Cumulative folders. Relevant information concerning a student's reading and mathematical achievement, attendance, school history and socio-emotional history may help you develop a better understanding of the student.

Medical reports. Information in medical reports reveals problems in hearing, vision and physical or health-related impairments that may affect the student's ability to perform in the classroom. This information can help you make necessary classroom and instructional adjustments.

Individual Educational Program (IEP). This document provides background information on the student's performance in academic, social and vocational areas. It identifies goals and objectives for the student, describes the services being provided and outlines the procedures being used to evaluate the progress of the student.

Resource or special education teacher. Professionals in this area, often as part of their duties, collect diagnostic and evaluative information on mildly handicapped students. This often includes information on academic skills (reading level, mathematics skills), social skills, learning styles and relevant behaviors. They may also have information on teaching techniques and methods which have been effective in the past.

Support personnel. Other school personnel may also provide information about the student. These may include the school psychologist, the speech therapist, the school nurse, physical and occupational therapists and the school social worker.

School counselors. The school counselor may be able to provide information on the student's past school performance, career development, social skills and interests.

Parents. Parents may provide valuable information about the student's performance outside of school. They can identify past experiences, interests, areas of particular difficulty and other services being provided.

Students. A teacher-student conference lets you develop a rapport and get to know more about the student's needs, interests and goals. This type of information can be recorded after the conference and kept for future reference.

Guidelines to Informal Classroom Assessment of Skills (Pre-tests)

Purpose

Pre-tests are an effective way to gain information useful in planning instruction. Students normally begin a course at a wide variety of skill levels. The pre-test can identify students likely to have difficulty and specifically determine the starting point for instruction. Typically, pre-tests focus on determining basic tool skills and background experiences. Basic tool skills usually include such areas as content reading, mathematics, listening, writing, study and prevocational skills. Background experience usually includes an awareness of vocabulary, a knowledge of prerequisite courses, the use of tools and equipment and knowledge of present course material.

Materials

Since the pre-test measures performance specific to a particular course, it is most effective if teaching materials actually used in instruction are used to construct the test.

Constructing a Pre-test

Here are some suggested guidelines for constructing a pre-test:

1. Identify essential prerequisite skills.
    a. basic tool skills
    b. background information/skills
2. Construct items which sample prerequisite skills (a more detailed assessment can be undertaken if difficulty is identified).
3. Identify essential course objectives or competencies.
4. Construct specific questions to determine which competencies the student may have already mastered.
5. Include a sample of items representing both prerequisite skills and the various parts of each unit or course.
6. Make test directions and items as clear as possible.
7. Include literal, interpretive and evaluative level questions (see example below).
8. Choose a test format that relies on student learning strengths.

Example

Objectives: To develop an appreciation for the poetry of the American poet, Robert Frost.
To develop an understanding of the type of poetry and motivations behind the poetry of Robert Frost.

Pre-test questions:

*1 Robert Frost is known best for his: (a) short stories, (b) novels, (c) music, (d) poems.
**2 Name two events in Robert Frost's life that influenced his poetry.
***3 Writing a poem involving nature using one of Robert Frost's schemes.

* literal
** interpretive
*** evaluative

Cloze Procedure

Purpose

The cloze procedure is used to assess reading comprehension in any subject matter area at any grade level. The student is assessed using reading materials taken directly from the student texts. Useful information regarding the appropriateness of texts can be obtained.

Materials and Construction

1. Select a paragraph of approximately 250 words from a textbook or other reading material normally used in the classroom.
2. Write out the first sentence in its entirety.
3. Beginning with the second sentence, omit every fifth word (except technical terms) from the selection, until 50 words have been deleted.

Direction to Students

1. Read through the sample and fill in the blanks.
2. You will not be given a list of words to choose from; you must try to decide which word the author would have used based on the other words in the sentence.

Note to teacher: A few practice trials preceeding the cloze test will help alleviate undue student frustration.

Scoring

1. Count the number of correct responses.
2. Multiply this number by two.
3. Refer to cloze table to determine at what level the student can read this material (frustration, instructional or independent).

Score	**Reading Level**	Procedure Reading Level **Comments**
50 55 60 65 70	Frustration	Student cannot be expected to read material without a great deal of frustration. Find alternate mode or material.
75 80 85	Instructional	Student can read material with help. Use of a peer tutor, study guide, etc.
90 95 100	Independent	Student should experience success with this assignment as homework. However, guides aid comprehension

Courmuth, J.R. Cloze test readability: Criterion reference scores. *Journal of Educational Measurements*, 1967.

Cloze Procedure Example
"Safety in the Wood Shop"

This is a true story: It was Friday afternoon in the wood shop and Jim was to pitch for his baseball team the next day. But he was anxious 1 finish the baseball equipment 2 he was building for 3 room. He needed to 4 a chisel to trim 5 board. His teacher had 6 him to keep his 7 away from the sharp 8 of the chisel, but 9 was in a hurry 10 thought he didn't have 11 to clamp the work 12 a vise. He held 13 wood in one hand 14 used the other hand 15 operate the chisel. Things 16 going along fine. Then 17 chisel slipped and the 18 edge hit Jim's thumb, 19 a deep gash. The 20 nurse put a bandage 21 it and told him 22 couldn't use the hand 23 several days. This means 24 game and a painful 25 besides. If only he'd 26 the rules. Jim was 27, though. The accident could 28 been a lot worse. 29 he had been working 30 a machine, he might 31 lost a finger.

What 32 wrong? For one thing, 33 wasn't following good safety 34. He failed to practice 35 important lessons. First, that 36 must always follow directions and 37 that he must never 38 chances. You must never 39 chances in the 40. Always read the 41 in the manual for 42 step, and watch the 43 as he or she 44. Of course, everything you 45 has some danger in 46. You can get hurt 47 a game as well 48 working in a shop. 49 keep yourself safe, 50 must learn the hazards and avoid them by following good safety practices.

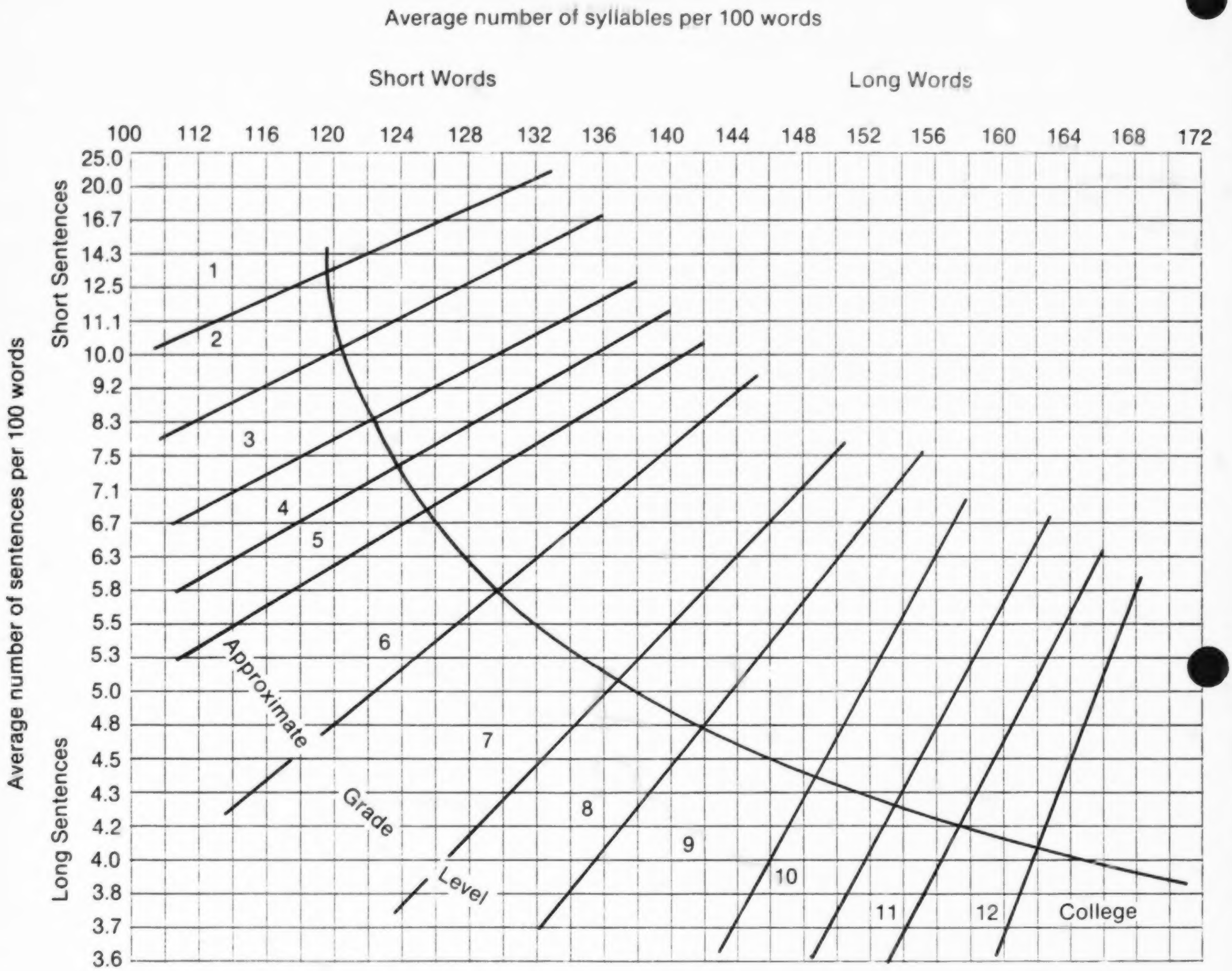
Key

1. to
2. rack
3. his
4. use
5. a
6. warned
7. hands
8. edge
9. Jim
10. and
11. time
12. in
13. the
14. and
15. to
16. were
17. the
18. cutting
19. cutting
20. school
21. on
22. on
23. for
24. no
25. cut
26. followed
27. lucky
28. have
29. if
30. on
31. have
32. was
33. Jim
34. habits
35. two
36. he
37. second
38. take
39. take
40. shop
41. instructions
42. each
43. teacher
44. demonstrates
45. do
46. it
47. playing
48. as
49. to
50. you

Feirer, John L. *Basic Woodworking*. Peoria, Illinois: Chas. A. Bennett Company, 1978.

Graph for Estimating Readability

by Edward Fry, Rutgers University Reading Center, New Jersey



Directions: Randomly select three 100-word passages from a book or an article. Plot average number of syllables and average number of sentences per 100 words on the graph to determine the grade level of the material.

Choose more passages per book if great variability is observed and conclude that the book has uneven readability. Few books will fall in a gray area but when they do grade level scores are invalid.

Example:	**Syllables**	**Sentences**
1st Hundred Words	124	6.6
2nd Hundred Words	141	5.5
3rd Hundred Words	158	6.8
Average	141	6.3

Readability 7th Grade (see dot plotted on graph)

Quick Comprehension Check

Purpose

The quick comprehension check is an informal method of determining whether a student comprehends the information in a text and if the degree of comprehension differs from reading silently, aloud or being read to.

Materials

Class text.

Instructions

Select two or three paragraphs or long passages in three different sections of the text. Ask the student to read one passage aloud. Then ask the student questions about that passage (such as, what happened in the paragraph or who the main character was and what happened to him or her). Ask the student to read another passage silently. Ask questions covering that passage. Finally, ask the student to listen as a passage is read orally by the teacher and ask questions about the passage.

By having the passage read orally by the student, silently by the student and orally by the teacher, you can detect areas in which the student is experiencing difficulty with comprehension based on the accuracy of the response to questions. Once the teacher determines student strengths and weaknesses, appropriate instruction and materials can be selected for the student.

Study Habit Observation Technique (SHOT)

Purpose

The Study Habit Observation Technique (SHOT) is an informal nonstandardized instrument. The SHOT helps students explore their study preferences. It provides information regarding the way they learn as well as what environment is most suitable.

Materials

Student SHOT questionnaire, SHOT recording form and SHOT summary.

Instructions

Give the students the SHOT questionnaire instructing them to place a check in the appropriate column. Using the recording form, place a tally mark on the blanks after the numbers marked true by the student. Then total the tally marks under each column. Compare the ratios under each column. The column with the highest ratio indicates the type of study habit the student prefers. Apply this procedure to all the columns underneath student environment, work habits, responsibility, structure and perceptual preference.

Complete the final summary page for each student describing the student's individual study habit preferences. Consider matching assignments and other learning experiences to individual preference.

SHOT Questionnaire

Directions: The student should place a checkmark in the column marked true if the statement describes his or her behavior, and in the column marked false if the statement does not accurately describe his or her behavior.

	True	False	I. Environmental Stimuli
A. Study Environment			
1.			I can study best when it is quiet.
2.			I can study with a little noise.
3.			I can block out noise when I study.
4.			It is difficult to study with soft music playing.
5.			I can study if people talk quietly.
6.			I can study when people talk.
7.			It's difficult to block out TV when I am studying.
8.			Noise bothers me when I am studying.
9.			When I study I like to sit on the floor.
10.			I find it difficult to study in class.
11.			I finish all homework in class.
12.			I work best in a library.
13.			I can study almost anywhere.
14.			I like to study at a desk.
15.			I find it difficult to concentrate on my studies at home.
16.			When I study I like to sit on a soft chair or couch.
B. Work Habits			
1.			I feel good when I do well in school.
2.			My teacher feels good when I do well in school.
3.			I am embarrassed when my performance is poor.
4.			I like making my teacher proud of me.
5.			Nobody really cares if I do well in school.
6.			My teachers care about me.
7.			I want to get good grades for me.
8.			There are many things I would like doing better than going to school.
9.			I try to finish school assignments I start.
10.			I usually finish things I start.
11.			I sometimes lose interest in things I begin and then stop doing them.
12.			I rarely finish things that I start.
13.			I often have to be reminded to do my homework.
14.			I often get tired of doing things and want to start something new.
15.			My teacher is always telling me to finish what I'm supposed to do.
16.			Other people tell me to finish things I have started.
17.			Somebody is always reminding me to do something.
18.			My parents care about my grades.
19.			I am happy when I do well in school.
20.			I feel bad and work less when my grades are bad.
21.			I feel good making my mother or father proud of me when I do well in school.
22.			I usually remember to finish my homework.

True | False

23. It is more important to me to do well in things that happen out of school than in my school work.
24. I like getting things done.

C. Responsibility

1. I think I am responsible.
2. I always do what I promise to do.
3. I have to be reminded over and over again to do the things I've been told.
4. If my teacher tells me to do something, I try to do it.
5. I keep forgetting the things I've been told to do.
6. I remember to do what I'm told.
7. I like doing what I'm supposed to do.
8. People keep reminding me to do things.
9. I have to be reminded often to do something.

D. Structure

1. I like to work alone.
2. I like to work with a good friend.
3. I like to work with a couple of my friends.
4. I like to work in a group with five or six individuals.
5. I like to work with an adult.
6. I like to work with a friend but to have an adult nearby.
7. I like to work with a couple of friends but to have an adult nearby.
8. The thing I like doing best, I do alone.
9. The thing I like doing best, I do with a small group of students.
10. The thing I like doing best, I do with a group of friends.
11. The things I do best, I do with a friend.
12. The things I do best, I do with several grown-ups.

II. Perceptual References

A. If I learn something new:

1. I like to learn about it by reading.
2. I like to learn about it by listening.
3. I like to learn about it by viewing materials, such as filmstrips.
4. I like to learn about it by looking at pictures, and having someone explain them.
5. I like to learn about it by having someone demonstrate to me.
6. I like to learn about it by having a teacher tell me.

B. The things I remember best are the things:

1. My teacher tells me.
2. Someone other than my teacher tells me.
3. Someone shows me.
4. I read.
5. I hear, like a tape or radio.
6. I see on television.
7. I try or work on.
8. I write about.

SHOT Recording Form

To be completed by the teacher.

Directions

Referring to the student's answers, place a tally mark on the blanks after the questions marked true by the student. Then total the tally marks under each column.

Compare the ratios under the "needs quiet" and "noise acceptable" columns. The column with the larger ratio indicates the type of study habit preferred by the student.

Compare the ratios under "needs formal structure" and "informal structure acceptable." Again, the column with the larger ratio indicates the student's preference. Apply the same procedure to the areas of work habits, responsibility, structure and perceptual preference.

I. Environmental Stimuli

A. Study Environment

Needs Quiet	Noise Acceptable	Needs Formal Structure	Informal Structure Acceptable
1.	2.	11.	9.
4.	3.	12.	10.
7.	5.	14.	13.
8.	6.	15.	16.
Total/4	Total/4	Total/4	Total/4

B. Work Habits

Self-motivated	Adult-motivated	Teacher-motivated	Not motivated	Persistent	Not Persistent
1.	13.	2.	5.	9.	11.
3.	17.	4.	8.	10.	12.
7.	18.	6.	20.	22.	14.
19.	21.	15.	23.	24.	16.
Total/4	Total/4	Total/4	Total/4	Total/4	Total/4

C. Responsibility

Responsible	NOT Responsible
1.	3.
2.	5.
4.	8.
6.	9.
7.	
Total/5	Total/4

D. Structure

Independent	Peer	Adults	Group of Peers	Peers and Adults
I	2.	5.	3.	6.
8.	11.	12.	4.	7.
		9.		
	10.			
Total/2	Total/2	Total/2	Total/4	Total/2

II. Perceptual Preference

Auditory	Visual	Auditory Visual	Graphic
A2.	A1.	A4.	B8.
A4.	A3.	A5.	B7.
B1.	B3.	B6.	
B2.	B4.		
B5.			
Total/5	Total/4	Total/3	Total/2

Reinforcement Inventory

Purpose

A reinforcement inventory is given at the beginning of the term as an aid in getting to know the student. It can be valuable for behavior management because it may reveal what is reinforcing to a student. Here is a sample reinforcement inventory. You may wish to construct your own items.

Name ______________________ Date ______________________

1. When I have free time outside of school, I like to ______________________

2. I like books about ______________________

3. My favorite school activities are ______________________

4. My favorite music group is ______________________

5. I have always wanted to ______________________

6. The last two books I read are (1) ______________ (2) ______________

7. If I suddenly received a large amount of money I would ______________________

8. I would like a part-time job doing ______________________

9. I read the newspaper: everyday___ sometimes___ never___ (check one)

10. The magazine I like to read is ______________________

11. My favorite school subject is ______________________

12. My favorite book is ______________________

13. The three records I listen to most often are (1) __________(2) __________(3) __________

14. My favorite adult is ______________ I like him or her because ______________

15. The best reward for well done schoolwork is ______________________________.

16. When I graduate I want to ______________________________.

17. In this class I would like to spend time ______________________________.

18. When I'm in trouble I ______________________________.

19. The thing I do that bothers my teachers most is ______________________________.

20. In class I like to work: alone____ in a small group ____ (check one)

21. I feel a good teacher is one who ______________________________.

22. I would rather read: a short story____ a novel____ a magazine____ a biography
____ a newspaper____ a comic book____ (Check one or two)

23. I like to have time to study during class: everyday____ sometimes____ never____ (check one)

24. When I do well in school I ______________________________.

Observation Checklist

Purpose

The observation checklist can be used by the teacher or a paraprofessional to record student behaviors that occur in a specific instructional setting. The checklist may provide a baseline measurement or a record of current behavior as a basis for changing student behaviors and planning instructional strategies. It may also be used periodically to assess student progress or completion of specific instructional objectives.

DIRECTIONS

Part I: Complete all blanks (self explanatory).

Part II:

A, B, C, D and E (variables)

Under heading A, B, C, D and E, check the items which are most descriptive. If an item contains a blank, write the description required. More than one may be checked in each category. If more than one are checked, circle the numeral which corresponds to the behavior you consider to be of most concern.

F and N (rate)

The rate under sections F and N may be determined by a number of alternatives, such as actual counting of frequency, duration and percentage. Before the "per" write the number (#) of item; under F, write the count: minute = mn; hour = hr; day + dy; week = wk; month = mo; semester = sm; percent = pt.

Examples: If a child hits classmates an average of 12 times a week, the information under F would be (5) 12 per wk (frequency); or, if the child missed an average of six out of 10 words on spelling tests, the code under F would be (26) 60 pt (percent); or, if a child's attention span is limited to one minute at a task, the code would read (30) 1 per mn (duration).

G (change desired)

Under G, note whether you wish the behavior to increase or decrease to the rate indicated under H (using the same format as under F): Desire Increase In; Desire Decrease + De. The following example relates to the frequency count above and indicates that the teacher will accept the child's behavior of hitting twice a week.

Example:	F	G	H
(5)	12 per week	De	2 per wk

Part III:

Record the number of replications of the observed behavior within a specific time period from Part II in the grid provided. The example below refers to the child's behavior of hitting other children. The time may be in minutes, hours, days, weeks, etc.

Example:		Time	
#	Week 1	Week 2	Week 3
(5)	11	13	12

Part IV:

Relate any other pertinent information which would be helpful, such as behaviors of secondary importance, when conferences might be scheduled, good time for observation, physical condition of the child, etc.

Observation Checklist

I. Student ____________________ Sex____ Date of Birth ____________________ Age____

Grade______ School ____________________ Teacher ____________________

II. **A. Setting**

- ______ 1. Classroom
- ______ 2. School other than classroom ______________ specify
- ______ 3. Out of school

B. Activity

- ______ 1. Instructional
- ______ 2. Evaluational
- ______ 3. Independent
- ______ 4. Free time

C. Structure

- ______ 1. Large group ______________ (size)
- ______ 2. Small group ______________ (size)
- ______ 3. Alone

D. Curricular Area

- ______ 1. Reading
- ______ 2. Mathematics
- ______ 3. Other ______________ specify

E. Behavior

- ______ 1. Attendance ______ (Absent/Tardy)
- ______ 2. Leaves room without permission
- ______ 3. Leaves seat without permission
- ______ 4. Disobeys authority ______________
- ______ 5. Physically violent toward peers by (kicking, hitting, etc.) ______________
- ______ 6. ______________
- ______ 7. Cries
- ______ 8. Curses
- ______ 9. Makes derogatory remarks about ______________ (self/others)
- ______ 10. Remains alone
- ______ 11. Destroys property ______________
- ______ 12. Talks out inappropriately
- ______ 13. Copies work of others
- ______ 14. Contributes to discussion
- ______ 15. Clumsy ______________ (falls, runs into, drops, etc.)
- ______ 16. Asks for verbal direction to be repeated
- ______ 17. Does not complete assignments
- ______ 18. Uses incorrect verb forms in conversation ______________
- ______ 19. Uses incorrect noun and pronoun forms in conversation ______________
- ______ 20. Misarticulates the ______________ sounds
- ______ 21. Has unusual voice quality.
- ______ 22. Stutters (words per minute)
- ______ 23. Attention span limited ______________
- ______ 24. Other ______________ (specify)

#	F	G	H
____ ____ per	______________________		per____

III. Tallying Observations

Time

#						

IV. Other Information (use reverse side)

Adapted from: Stellern J., Vasa - S.F., & Little, J. *Introduction to diagnostic-prescriptive teaching and programming.* Glen Ridge, new Jersey: Exceptional Press, 1976, pp. 231-33

Chapter 10

Safety and Accessibility

Safety

A 1983 Department of Public Instruction survey of industrial education teachers in Iowa indicated a widespread concern for safety when working with handicapped students. Fifty-nine percent of the respondents believed they needed help in this area. However, there is no evidence that mildly handicapped students are at greater risk than other students.

Some teachers fear that handicapped students may be uncontrollable in the lab, creating a safety hazard for themselves and others. Again, no evidence indicates that handicapped students in the regular classroom are more disruptive on the average than other students. In fact, one advantage of working with handicapped students is the extra assistance available. If a behavior problem arises, the special education teacher can help find a solution. Of course, continuous disruptive behavior by any student cannot be allowed in the laboratory. For a special education student, a re-evaluation of placement can be requested if necessary. In some cases it may not be in the student's best interest to be in the regular classroom.

Fortunately, the most important strategy for ensuring the safety of handicapped students is simply a good safety program! For example, all students should pass each safety test required. Adaptive strategies may be necessary for some student handicaps. This simply means modifying instructions, such as giving the safety test orally. This can be done during the lull when others are being tested. The special education teacher can provide other ideas and can often help with adaptations such as helping a student in the resource room. For liability purposes, keep all safety tests or checklists on file.

A good safety program does not end with quizzes. All students need remedial instruction, especially if they have not used a particular tool for awhile. Also, it is imperative to require the use of safety devices such as safety glasses and ear plugs. Discuss emergency communication procedures with the students, outlining the steps in case of an accident. This section includes a list of suggested elements for a good safety program. You can also obtain a variety of books, articles and state guides on this topic.

With a comprehensive safety program, additional safety adaptations for handicapped students will be minimal. When a special student is placed in a regular classroom, it is assumed that the student has the intelligence and maturity level to meet the course objectives with a minimum of alteration. One needed alteration, however, may be more emphasis on safety. When a group of special students has a maturity level significantly below their age, a segregated technology education class is recommended. In this case, an adjusted safety program can be developed based on student needs.

Be sure that the special education teacher makes a habit of sending you information about special students, such as medications or physical problems that might affect functioning in the lab. A standard form can be developed for this which should streamline the communication process.

Legal Considerations

The primary function of the school safety program is to prevent accidents. If an accident does occur, it is normally one of the following types:

1. Pure accident: An unavoidable accident that could not be foreseen by the student or instructor.
2. Intentional act: An accident results intentionally.
3. Negligence: An accident results from the instructor, students or a combination acting in a careless manner.

Negligence is a major concern for instructors. To be held liable for negligence, it must be shown that an instructor failed to exercise the care expected of a reasonable and prudent person. Determination of a reasonable and prudent person includes: (1) acting in a manner consistent with that which a person of ordinary intelligence and foresight would act under similar circumstances; and (2) providing care consistent with the danger involved and age and maturity level of the student.

The best defense against a charge of negligence is having a good safety program and adhering to it. The courts expect a reasonable and prudent person to account for four areas if an accident occurs: having a plan; following the plan; providing for health and safety; and giving proper instruction. For example, if you are lax about safety glasses and an accident occurs, there would be negligence in following the safety plan. More teachers are found negligent for failing to follow a plan to prevent injuries than for failing to plan and foresee dangers.

Another important consideration in negligence is foreseeability. A reasonable and prudent instructor is expected to foresee potential dangers and take necessary precautions to avoid accidents. For example, if a student is injured while using improperly working equipment, the instructor may be held liable. Another example is making objects in class that can be potentially dangerous outside class. An instructor may be held liable if a student is not warned of this potential danger and given safety instruction. An example might be an electrical tester. If electrical safety is taught and documented, then the instructor has fulfilled his or her obligation.

Iowa has a "save-harmless" law which protects employees from financial loss that results from assigned duties. If an instructor is found negligent in a school accident, the school district will pay the damages. However, this does not protect the instructor and administrator from being charged with the accident and defending his or her instructional plan in court. This law also does not protect the instructor from damage to personal reputation in this instance.

Suggested Safety Program Components

The following components are suggested for a comprehensive safety program:

1. Policy and Objectives
    a. school system policy
    b. lab use policy
    c. program safety objectives

2. Safety Inspections
    a. annual lab safety inspection and recommendations
    b. annual architectural accessibility inspection and recommendations

3. Instruction
    a. general lab safety rules
    b. specific equipment safety rules

4. Evaluation and Documentation
    a. cognitive tests
    b. performance tests
    c. recordkeeping form for documentation

5. Emergency Action
    a. emergency action procedures (primary and secondary)
    b. parent/guardian communication
    c. accident report form
    d. hazardous conditions report form
    e. tags for non-working machinery

6. Maintenance
    a. maintenance cards for equipment

Note: Additional information on these components can be found in the *Industrial Arts Organization and Administration Handbook*, available from the Iowa Department of Education.

Reference: Pennsylvania Industrial Arts Safety Guide, Second Edition, 1981. Adapted courtesy of the Pennsylvania Department of Education and Industrial Arts Association of Pennsylvania.

Suggested Teaching Techniques

1. Be sure that eye protection is worn. Have the students remind each other that safety glasses must be worn.

2. Check out each student on the power tools that he or she is about to use. Review the safety rules from time to time with each student, especially after a vacation or prolonged absence of the student. Be sure to document the reoccurrence of this instruction.

3. Medical records should be checked to determine if any special students are subject to seizures, fainting spells, etc. If the teacher finds someone with one of these conditions, that person should be given extra attention while using all equipment.

4. Make students aware of the potential dangers of cleaning agents, cutting fluids, solvents, thinners, lubricants, etc.

5. Remind students periodically of the importance of keeping work areas clean and free of hazardous objects.

6. Usually there is not a problem of horseplay by special students in a shop class unless they are encouraged by other students. The amount of horseplay will depend on the professional personnel and the rules established for the laboratory. If students are kept busy and supervised, horseplay for the special student is no major problem.

7. Isolation of a special student when rules of the laboratory are violated has been one of the most effective methods of discipline. Keeping the student separated from the rest of the group should last no longer than one class period.

8. Special students may have a tendency to wander about the laboratory area. They must understand that they have an area to which they are assigned and must stay there.

9. Testing of the special student's abilities should be done by continual observation by the teacher and demonstration by the student. Evaluation should not be limited to tests requiring reading, writing and comprehension.

10. Design jigs and fixtures that promote a higher level of student success while using tools and machines.

11. Communication between teacher and student

may be enhanced by using devices that improve reception and expression of information. Amplifying and magnifying stimuli, whether coming in or going out, are important considerations.

12. Individualize the program of instruction as much as possible to modify the instructional method to meet the needs of the student.

13. Plan to reserve a portion of your facility that can be made free from noise, physical stimuli and visual stimuli. This may help students who are easily distracted by them.

14. Minimize access barriers to sinks, tool cabinets, doorways, machines, workbenches, shelves, desks, etc.

15. Accept the child as he or she comes to you. Keep in mind that the student's success depends not only on his or her own characteristics and abilities, but also on the teacher's attitude and the quality of the learning environment.

16. Employ the aid of special education resource people on your school staff. These specialists can provide you with valuable information in dealing with the problems of the special needs students in your program.

17. Keep in mind that special needs students respond very favorably to frequent verbal praise and reinforcement. A non-reading "hands-on" environment may provide some real positive feelings of success for them, especially by seeing their finished products.

18. Encourage heterogeneous grouping in the classroom. Placing the special student in a small group of students with various abilities will provide a model for behavior in a laboratory or other industrial-type facility.

Emergency Action

Emergency situations can arise anywhere in the school environment. The procedures for dealing with these events should be developed and approved by each district or building before the school year starts. Review and revise these procedures periodically to determine their effectiveness.

When an Injury Occurs

There are two areas of concern in emergency situations. The first is the activities that must be done immediately following the injury. The second is the actions to be taken after the confusion has subsided and the injured party is treated.

Primary Concerns

Your first concern relates directly to the injured party and reducing the hazard to that person. The degree of emergency care depends on the injury and the qualifications of the person administering the care. If you are not qualified in first aid, only do the things that will ensure no further damage to the injured student, and immediately seek trained help. This might be limited to stopping the bleeding or covering a person in shock with a blanket. Although every teacher should be trained in basic emergency first aid, many are not. Serious damage to the injured can sometimes result when they are treated by a nervous, untrained, panic-ridden teacher. Here are some basic first steps to follow when an injury occurs:

1. Determine the extent and type of injury. If this is not possible, immediately obtain professional help.

2. Restore breathing, restore heartbeat and stop bleeding if trained in these areas; if not, send for help.

3. Apply only the first aid that is necessary to preserve life. Do no more until trained help arrives.

4. Disperse crowd and keep the injured and the surrounding area as quiet as possible.

5. Notify school nurse, principal and immediate supervisor by sending other students to these people. Do not leave the injured alone.

6. If the injury is minor, (splinter, slight cut) send the student to the school nurse accompanied by another student. Do not send the injured student alone.

7. If a foreign particle has entered the eye, seek professional help. A teacher should never try to remove something from a student's eye. If a liquid has entered the eye (acid, etc.), immediately wash the eye in an eye wash and contact the nurse.

8. Notify parents and school officials.

It is your responsibility to know what to do in case of an accident and also to know what not to do. This kind of information is best obtained through a variety of first aid courses offered by the Red Cross and other agencies. The first few seconds or minutes of a pupil's injury are sometimes the most critical. The action or inaction of the industrial arts teacher could be crucial to the student's life.

Secondary Concerns

When the injured students has been treated by professional help (nurse, ambulance crew or doctor) the teacher's concerns focus on the remaining students and the follow-up procedures regarding the injury.

1. Calm the other members of the class. Restore the situation to a safe environment. If the accident was serious, discontinue instruction for the period. The students will be too upset to perform effectively and may in fact be "accident prone" due to the accident.

2. Complete an accident report in triplicate; one for the school nurse, one for the principal and immediate supervisor, and one for your permanent file (to be retained until the injured pupil reaches age 21; if the pupil is a special education student, retain

permanently).

3. Analyze cause and effect of the accident and make written recommendations to the principal for corrective measures to be taken. (Retain a copy of this communication and subsequent action.)

4. Review and record safety practices, procedures, instruction and student evaluation concerning the cognitive, psychomotor and affective instruction that was delivered, and was intended to prevent this type of accident from happening.

5. Check on the results of the treatment of the injured pupil.

6. Follow-up in your classes with a discussion and instruction regarding the safe practices that were violated and contributed to the accident.

These procedures should also be followed for "almost accidents" to ensure that the conditions that almost caused an accident are treated and eliminated from the class or lab.

Emergency Communications

Procedures established for emergency situations and accidents must contain the approved method of "who tells what to whom and when." To facilitate this communication, each industrial arts room should have access to a telephone with a direct outside line for ambulance, fire and police emergencies. In addition:

1. All students should know the location of the telephone and be familiar with the emergency procedures and numbers.
2. All personnel in the laboratory should have access to the phone for emergency communications. (The telephone should not be locked in the teacher's office.)
3. Emergency procedures and police, ambulance and fire department numbers and the procedure for dialing an "outside" line should be posted at each phone location.

Communicating Safety to Parents

For years, industrial arts teachers have used "permission slips" to be sent home and signed by the parent permitting their child to participate in the shop program. Many teachers believed that this "permission slip" relieved them of some or all of their responsibility and liability should an accident occur. It does neither of these. The purpose of this type of communication is to:

1. Inform the parent of his or her child's participation in industrial arts activities.
2. Outline the safety instruction and procedures that are followed by the teacher and the district.
3. Obtain from the parent relevant information about health problems that may have a bearing on their child's performance.
4. List the parents' names and telephone number(s) where they can be reached during school hours and list the name of their family doctor.

An example of this type of communication to the parents is included in this section.

Hazardous Conditions Report

This is a suggestion for reporting the hazard and directing action to see that the hazard is corrected or removed.

If a hazard exists, the operation should be "red tagged" and shut down until corrected. (Note: This form can be used to report a student who is a hazard as well as a hazardous condition in the laboratory.)

Accident Reporting

Any accident that occurs during industrial arts activities and in the industrial arts shop must be reported. This applies to after-school accidents and those during the school day. Any accident, even a slight cut, must be reported since this indicates corrective action that must be taken by the teacher, administrator or both.

A form for reporting these accidents can be adapted from the one here. This report should be completed in triplicate; one for the principal, one for the school nurse and one for your permanent file.

Accident Reporting and Analysis

1. Require students to report all accidents to the teacher, regardless of nature or severity.
2. Keep a record of all industrial arts accidents resulting in injury to students, regardless of nature or severity.
3. Analyze all accident reports to help prevent other accidents.
4. Use your school district's printed or duplicated form to record the details of accidents and forward to the appropriate personnel.

The Student and Safety in Industrial Arts

School District
Industrial Arts Department
School:
Teacher:
To: Parent or Guardian

(Name of Student) is enrolled in our industrial arts program and will have the opportunity to use various tools and equipment. Appropriate instruction in the safe operation of these tools and equipment is given and close supervision is maintained at all times. Although every precaution is taken to prevent accidents, a certain risk is involved due to the nature of the experience, the age of the student, and the learning environment.

We are asking your cooperation in impressing your child with the importance of being careful. We believe this will back up the instruction given in school.

We welcome your visit to our school and the industrial arts department to see our program. These visits can be arranged by calling

Thank you very much for your help and assistance in providing your child with the "real world" experience of industrial arts in a safe working environment.

I have read the attached communication and I understand the type of program that (student name) is enrolled in. I will stress the safety aspects of this program to my child. I encourage my child to participate fully in this industrial arts program.

(Signature of Parent or Guardian) ____________________ Date ____________

Phone ____________________(Home) ____________________(Work)

Please identify any health problems which may have a bearing on your child's participation in this class.

I agree to observe all safety rules and procedures for safe operation and conduct in the school industrial arts shop and will wear approved eye protection at all times in the laboratory in accordance with state law.

(Signature of Student) ____________________Date ____________

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Industrial Arts Department

Student Accident Report

To be Completed by Instructor

Student Name ______________________ Grade ______________

Location of Accident ______________________ Time ________ A.M. / P.M.
(Lab Area)

Data of Accident

Description of Injury ______________________

Location of Instructor when Accident Occurred: ______________________

Description of How Accident Happened: ______________________

Indicate Equipment, Machinery or Tools Involved: ______________________

Describe unsafe practices, if any, contributing to accident: ______________________

Suggestions for prevention of similar accident: ______________________

Witnesses to Accident: 1. ______________________

2. ______________________

Instructor's Signature ______________________ Date ______________

Student's Signature ______________________ Date ______________

Note: One copy to be filed with department chairman

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Hazardous Conditions Report

Date ______________________

To: ____
(Building Administrator, Position, School)

Description and Location of Health or Safety Hazard:

Suggested Solution:

Teacher Signature: ______________________________

Distribution:
Original - Building Administrator
1st Copy - Department Chairperson
2nd Copy - Teacher Reporting Hazard
3rd Copy - District Safety Officer

Action Taken:

By Whom: ____
(Signature)

Standing First Aid Measures

Reprinted courtesy of the West Des Moines Community School District, West Des Moines, Iowa.

I. All injuries occurring at school are to receive first aid and first aid only at school.

II. First aid is the immediate, temporary care given in case of accident or sudden illness, before the services of a physician can be secured.

III. Any student who is injured or appears to be seriously ill should not be moved until extent and nature of injury is determined.

IV. Do not move the severely injured. Treat for shock by keeping the patient lying down and warm. (Conserve body heat with blankets, coats, etc.)

V. Notify parents. If parents have signed a permission card to call a doctor in case of extreme emergency, the W.D.M., the Clive or Windsor Heights police ambulance according to the location of the accident, may be called to take the victim to a designated physician or to a hospital at the physician's request. If you are unable to locate a parent or responsible person and the parents have not signed a permission slip, you will have to call the police ambulance serving that area and they will take the patient to Broadlawns County Hospital but no treatment can be started without the parents' permission. It is essential that a parent be located as soon as possible.

VI. Parents are always to be notified of a child becoming sick or injured at school. Sick or injured children are not to be sent home alone. If unable to locate parents or nurse, keep children on nurse's cot at school.

VII. In case of severe abdominal pain, give child bed-rest, restrict all liquids and food. Immediately notify parents, advising that a physician see the child.

VIII. Abrasions and Wounds:

1. Small: Wash with soap and water, washing from center to outer edges of wound using clean cotton balls for each stroke. Paint with Zephiran. Apply sterile bandage. Simple clean wounds should be painted with Zephiran, bandaged and left alone.
2. Large: Apply dressing. Press firmly to stop bleeding. Bandage. Secure medical care.

IX. Splinters: Cleanse part with Zephiran, remove splinter with sterile tweezers or needle, and paint with antiseptic.

X. Bruises: Rest injured part. Apply cold compresses for half hour. If skin is broken, treat as a cut.

XI. Sprains: Elevate the injured part if possible and support. Apply cold compresses for half an hour.

XII. Fractures:

1. Simple fractures: Suspect a fracture if the part does not have a normal appearance or function. Splint or support securely the affected part to avoid further injury.
2. Compound or open fractures:
    a. Place clean pad or clean cloth, etc., over wound. Control hemorrhage by direct pressure.
    b. Hold pad firmly in place with bandage, cloth strip, etc.
    c. Keep victim lying down.
    d. Call physician.
    e. Apply splints if necessary but ambulance personnel will usually do the splinting before the victim is moved.

XIII. Head Injuries: If patient is unconscious or semi-conscious, following an accident of violence, injury to the head is usually the cause.

1. Keep patient lying flat and level, if conscious. If unconscious place small pillow under head.
2. Apply cold compresses or ice bag.
3. Notify parents or physician.

XIV. Nose bleed:

1. Keep patient in sitting position with the head elevated.
2. Elevate chin as high as possible.
3. Pinch the nostrils together for 4 -5 minutes.
4. Cold wet cloths may be applied to stop bleeding.
5. If bleeding does not stop, pack the bleeding nostril with wedge of cotton or sterile gauze.

XV. Severe blow on nose:

Crooked nose usually indicates fracture .

1. Apply cold compresses.
2. Watch for difficulty in breathing.
3. Advise physician.

XVI. Bites or stings:

1. Insect: Remove stinger, if necessary. Immediate application of ice or ice water gives relief. Apply baking soda or calamine lotion locally to relieve itching.
2. Animal: Wash with clean water and soap. Hold under running water if not bleeding profusely. Apply sterile dressing. Consult physician.
3. Human: Treat as animal bite.

XVII. Burns:

1. Minor: Run cold tap water over burn for several minutes or immerse in cool water. Apply benzocaine benzoate compound or vaseline. Cover with sterile dressing.
2. Major: Keep patient flat. Dry wrap with clean cloth. Take patient to hospital or physician at once.
3. Chemical burns: Area flushed with cool water then treat as a comparable heat burn.

XVII. Eye

1. Foreign body:
    a. Lift the upper eyelid out and over the lower lid and let tears wash out the particle.
    b. If speck is visible remove with moistened cotton applicator or corner of clean cloth or facial tissue.
    c. If foreign particle cannot be easily removed, cover the eye with a sterile compress and refer to parents for medical care.
2. Severe eye injury: Bandage with a sterile gauze and call doctor immediately.
3. Chemical burns: Flush eye with water immediately for approximately 15 minutes. Cover with sterile dressing and summon a doctor.
4. Black eye: Place ice bag or cold compress or cloths wrung out of cold water over eye immediately for about 15 minutes.
5. Determine if patient is wearing contact lenses. In case of severe injury notify physician that patient is wearing lenses.

XIX. Fainting:

1. If patient feels faint have him sit in a chair, bend his head forward between knees until he feels better.
2. If patient has fainted keep him lying down, head lowered or legs and hips elevated. Loosen clothing around neck and waist. Let him have plenty of fresh air and not have a crowd around him. Keep patient quiet at least 10 minutes.

XX. Heat Illnesses:

1. Heat stroke: Patient will collapse. Dry hot skin which indicates sweating mechanism failure and rising body temperature. *This Is An Emergency*: Delay could be fatal. Immediately cool patient by the most expedient means. Immerse in cool water or drench his clothes with cool water. Apply cold cloths or ice bag to head.
2. Heat exhaustion: Weakness and pallor with profuse sweating. This indicates state of shock due to depletion of salt and water. Place in shaded area with head level or lower than body. Give sips of diluted salt water. Obtain medical care at once.

XXI. Frostbite:

Frozen parts of body get white or grayish-yellow and numb. Immerse frozen part in tepid (not hot) water (100°F.) or cover parts with warmed **not hot** towels and blankets. Contact physician.

XXII. Teeth:

1. If a tooth has been broken off and dental pulp is exposed, pain may be relieved by covering tooth with tissue or gauze. Contact dentist.
2. If a tooth is knocked out of its socket, the tooth should be kept moist. The victim and the tooth should be taken to the dentist as soon as possible.

XXIII. Control of hemorrhage:

1. Most bleeding can be controlled by applying pressure directly on the wound itself, or pressure bandage may be applied.
2. If this does not check the bleeding, digital pressure may be applied.
3. The tourniquet should be used only for severe, life-threatening hemorrhage that cannot be controlled by other means.

XXIV. Diabetics: Identify known cases as soon as possible and watch for unusual signs of behavior.

Insulin reaction:

1. Symptoms:
    a. rapid onset
    b. weakness and fatigue
    c. skin moist and pale
    d. full and rapid pulse
    e. shallow breathing
    f. excitement and nervous (shaky) manifestations
    g. confusion and vision disturbance
    h. may act intoxicated
2. Causes of insulin reaction:
    a. overdose of insulin
    b. delayed, omitted or lost meal
    c. excessive exercise before meals
3. Care of patients with insulin reaction :
    a. Some form of sugar - sugar cubes, candy, fruit juices or sweet soft drinks are kept in the refrigerators or nurse's offices of all schools.
    b. If he cannot swallow, call a doctor or ambulance immediately.

Diabetic coma:

1. Symptoms:
    a. gradual onset
    b. skin dry and flushed
    c. weak and rapid pulse
    d. breathing labored
    e. drowsy behavior
    f. breath will have a fruity odor (like acetone)
2. Causes of diabetic coma:
    a. insufficient insulin
    b. excessive amount of food
    c. acute illness or infection

3. Care of patients with diabetic coma :
    a. Prompt medical attention and emergency hospitalization.

XXV. Convulsions and Seizures:

1. Keep calm. You cannot stop a seizure once it has started. Let the seizure run its course. Do not try to revive the person.
2. Ease the person to the floor and loosen his clothing.
3. Try to prevent him from striking his head or body against any hard, sharp, or hot objects but do not interfere otherwise with his movements.
4. Turn his face to the side so that saliva can flow out of his mouth.
5. Do not insert anything between the person's teeth.
6. Do not be frightened if the person having the seizure seems to stop breathing momentarily.
7. After the movements stop and the person is relaxed, he should be allowed to sleep or rest if he wishes. After resting a while the person may seem groggy, confused or weak.
8. It is not generally necessary to call a doctor unless the attack is followed almost immediately by another seizure, or if the seizure lasts more than about 10 minutes.
9. If the person is a child, the parents or guardians should be notified that a seizure has occurred.
10. After a seizure, many people can carry on as before.

Student Safety Guide Example

Reference: Industrial and Vocational Education Safety Guide, 1978.

Reprinted courtesy of Davenport Community Schools, Davenport, Iowa.

This section of the guide should be readily accessible to all students as active participants in the school safety program. Teachers should encourage suggestions and contributions to this guide as an on-going activity to keep abreast of changing trends in the school.

A Message to Students

You should learn about the procedures, tools and machines to use them with confidence instead of being scared or being a show-off fool. Don't fake it. . . learn it! Horseplay in the shop is for people who never grow up.

We talk a lot about common sense and why the other person doesn't use it, but in the school shop the whole safety program depends on it and that means everyone in the course. . . no exceptions. It does require involvement by you. . . the individual student. Do your thing for safety because other students are depending on you.

Student Responsibility

As a student in industrial arts you have a responsibility not only to yourself but to the group for safety in the classroom and the shop areas. Selfish attitudes such as "each person for himself/herself" should not be part of the school shop scene. Teamwork is required for the safety of all members who participate. Don't wait for the next person to correct an unsafe condition. . . just do it or call it to the attention of your teacher. The following outline is your responsibility to your team:

1. Follow instructions:
    - observe safety rules.
    - no horseplay.
    - operate machinery only when authorized to do so.
    - keep machine guards in place.
    - follow approved procedures.
2. Keep work areas clear:
    - keep floors and benches clean.
    - replace tools properly.
    - wipe up spills.
    - keep aisles clear.
3. Dress properly:
    - wear safety glasses.
    - no loose clothing.
    - no jewelry.
    - secure long hair.
    - wear shoes.
    - use proper protective gear.
    - always wear an apron.
    - do not wear gloves when operating machines.
4. Report unsafe conditions:
    - missing guards.
    - defective machinery or tools.
    - frayed electrical cords or defective switches.
    - dull tools or machinery.
    - stop unsafe act by another student.

Safety Practices for All Areas

Safety rules vary from one school to another. However, most school shops have definite rules and regulations to follow and the teacher has the responsibility to enforce them. A successful safety program results from an understanding by the students of the reasons and the advantages for each rule.

"Basic Eight" Safety Rules

Rule 1. Have the teacher approve all work that you plan to do and all equipment that you plan to use.

Reasons:

a. Ensure the best, easiest and safest way to do the job successfully.
b. Protect all class members from accidents caused by careless or incompetent use of tools and machines.
c. Ensure that equipment and machines are not abused or misused.

Rule 2. Qualify as a Safe Machine Operator and have the teacher's permission before using any machine tool.

Reasons:

a. Ensure that the student understands the proper operating procedures and can perform them safely on the equipment in the shop.
b. Provide the teacher the opportunity to make certain that all persons are protected from accidents caused by careless or improper use of the machine.
c. Make sure that the machine selected will provide the most efficient, easiest and safest method for doing the job.
d. Allow the teacher the opportunity to check the condition of the machine.

Rule 3. Always wear approved eye protection whenever anyone is working in the shop or wherever eye hazards exist.

Reasons:

a. Required by the Code of Iowa - 280.20, May 1965 and July 1970.
b. Protect all persons in a shop area from possible eye injuries.

Rule 4. Wear clothing suitable for shop work and always have on the proper protective "gear" when necessary.

Reasons:

a. Protect yourself from accidents or injuries caused by unsuitable clothing or lack of clothing.
b. Prevent injuries from obvious hazards.
c. Protection from an unforeseen accident or one that occurs only rarely.

Rule 5. Make sure that no other student is in your machine's safety zone.

Reasons:

a. Prevent crowding and bumping the operator.
b. Give student operator complete responsibility in the use of the machine.
c. Protect all class members from injuries caused by moving machine parts and flying pieces of material.

Rule 6. Cooperate with your classmates in the student management of the shop.

Reasons:

a. Make sharing in the responsibilities of shop management a satisfying experience.
b. A greater amount of time for productive shop work will result from efficient handling of tools and materials.
c. Equal distribution of tasks is necessary in maintaining a desirable place to work.

Rule 7. No student is allowed to work in the shop unless a qualified shop teacher is present.

Reasons:

a. The shop teacher is responsible for the personal safety of each student in his or her class or shop.
b. The safety of the students working would be jeopardized without proper supervison.
c. The professional status and reputation of the teacher would be jeopardized if an accident occurred.

Rule 8. Report all injuries, even though slight, to the teacher immediately.
Reasons:

a. Teacher will determine if treatment is required for the injury. Immediate attention may be given by the teacher.

b. First aid treatment helps prevent minor cuts, abrasions, bruises or burns from becoming infected.

c. Assist teacher in correcting situations to prevent further injuries.

Safety Rules for all Students

General

1. Have your teacher approve all work you plan to do and all equipment you plan to use.
2. Wear appropriate clothing for shop work. Remove or fasten any loose clothing or necktie. Roll sleeves above elbows. Always wear an apron.
3. Long hair should be confined to prevent becoming entangled in any moving part of a machine.
4. Wear shoes in the shop at all times to prevent foot injuries.
5. Always wear approved eye protection whenever anyone is working in the shop or wherever eye hazards exist.
6. Always wear approved safety "gear" when necessary. Special dark lenses near welding, face shields near grinders and spot welders, protective coverings near hot or molten metals, and respiratory mask near paint fumes or heavy dust.
7. Caution any student you see violating any safety rule.
8. Horseplaying, running and throwing objects in the shop are forbidden.
9. Report to the teacher any equipment or tool that does not seem to work properly. Do not force tools under any condition.
10. Keep tools and materials from projecting over the edge of benches whenever possible.
11. Use a brush or piece of wood to clear away chips. Never use your hands.
12. Place oily, dirty rags and other combustible materials in a covered metal container.
13. Keep bench and cabinet drawers and locker doors closed.
14. Cooperate with your classmates in the management of your shop.
15. Only one student should be in the safety zone for each machine.
16. Keep floor clear of scraps and litter.
17. Wipe up immediately any liquids spilled on floor. Use a rag to clean oily areas.
18. Exercise care in handling large, heavy or long material. Know proper method to lift any object. Get help when needed.
19. Report all injuries to your teacher immediately.
20. Know and practice procedure to follow in case of fire or other disasters.
21. Be sure hands and floor area are completely dry before handling any electrical equipment or receptacles.
22. Compressed air is dangerous, especially to the eyes and ears. Never direct the stream of air to the upper part of the body.
23. Keep talking to a minimum and keep your mind on your work.
24. Never look directly at a welding process without wearing the proper dark lenses.
25. Never put nails, tacks, screws, rivets or other small objects in your mouth.
26. Never use gasoline, kerosene, paint, lacquer or thinners around an open flame or sparks.

Hand Tools

1. Do not use tools with oily, greasy or wet hands.
2. Select the proper size and type of hand tool for the particular job. Do not

abuse it by doing something it wasn't designed to do.

3. Tools with sharp cutting edges will work properly and safely. Report dull tools to the teacher for sharpening.

4. Handle sharp pointed or edged tools with care. Pass tools to classmates with the handles first. Never throw them.

5. When using sharp-edged tool, point the edge away from yourself and all others.

6. Clamp small work on bench or secure in vise when using gouge, file, wood chisel, screw driver or hacksaw. Always clean and close vises when finished.

7. Control chisels, gouges or carving tools with one hand while the other hand supplies the power. Always respect the direction the cutting edge is moving.

8. Wear face shield and safety glasses when chipping or cutting with a cold chisel. Arrange your work so that others are protected from flying chips.

Machine Tools

1. Qualify as a Safe Machine Operator. (S.M.O.)
    a. Receive instruction and a demonstration by the teacher on each machine.
    b. Pass a written safety test on each machine.
    c. Receive a "Student Performance Check-Out" on each machine by the instructor.

2. Operate only those machines for which you have qualified and have permission to operate.

3. Make all adjustments on machines before turning on the power. (Rotate machine one revolution by hand whenever possible without danger before turning on the power.)

4. Keep all safety guards in place.

5. All "special set-ups" must be checked by the teacher before the power is turned on.

6. Make sure all other students are outside the operator's safety zone before operating or turning on the power. The safety zone should be dry and clean.

7. Do not operate any machine tools with oily, greasy or wet hands.

8. Start your own machine and remain with it until it comes to a complete stop. Never leave a machine running and walk away from it.

9. Notify teacher when a machine is not working properly.

10. Stay clear of machines being operated by others. Do not lean on machines.

11. Wait for machine to come to a complete stop before oiling or cleaning. Turn off power to machine or remove plug from outlet before making major adjustments or changes on machines.

12. Always stay "clear" of all moving parts of a machine.

Qualifying on Machines

All students must qualify as a Safe Machine Operator for each machine before using them in the shop. The amount and kind of instruction varies with the teacher, but the process is basically the same for all machines.

Initial Orientation

This is usually a briefing about the machine and its uses. Major parts are identified and adjustments are discussed. Visual aids may be used during this orientation. Safety instruction is started at this time.

Demonstration

Safety instruction is continued during the demonstration phase on the machine itself. The teacher will demonstrate the use of the machine in the following cycle:

a. preparation
b. actual operation
c. shut down.

The question/answers should be continuous throughout the demonstration. If a point it not clear, ask the teacher to go over the point until you are satisfied. . . don't try to guess at it later.

Safety Check

All students must pass a safety exam before using any power machinery. This exam is to check your knowledge about the machine and its safe operation. If you fail the exam, go over the questions with your teacher and review the demonstration phase. If words on the exam are confusing, perhaps you can do better by pointing out your answers on the machine to satisfy this requirement.

Student Performance

The student will use the machine for the first time under the direct supervision of the teacher. Be cool and concentrate on what you are doing. . . don't rush yourself. The teacher will guide you through the operation and will correct your procedures until he or she is satisfied that you can do it safely. After you have successfully completed your performance, you will be qualified to use that particular machine.

Qualification Completed

After you have qualified on a machine, a note will be made on your card or file about the kind of machine that you qualified on and the date.

Operation Procedures for Machines

The following procedures shall be used by all students for operating machines. . . without exceptions. You must be qualified on a particular machine before you can use it. It is important to obtain permission from the teacher before using any machine because all machines can be dangerous. Some machines must be operated only under his or her direct supervision and assistance. The teacher is responsible for all the students in the shop and your cooperation is required for an accident-free shop.

There is a basic cycle which applies to the operation of any machine. The three phases are: 1) preparation, 2) operation, 3) shut down. This cycle should serve as a checklist for the student while doing his or her work.

Preparation

1. Always have permission from the teacher.
2. Clear the area for work.
3. Wear proper clothing, remove jewelry, secure long hair and wear an apron.
4. Inspect machine-wiring, switches, guards, etc.
5. Use proper protective gear.

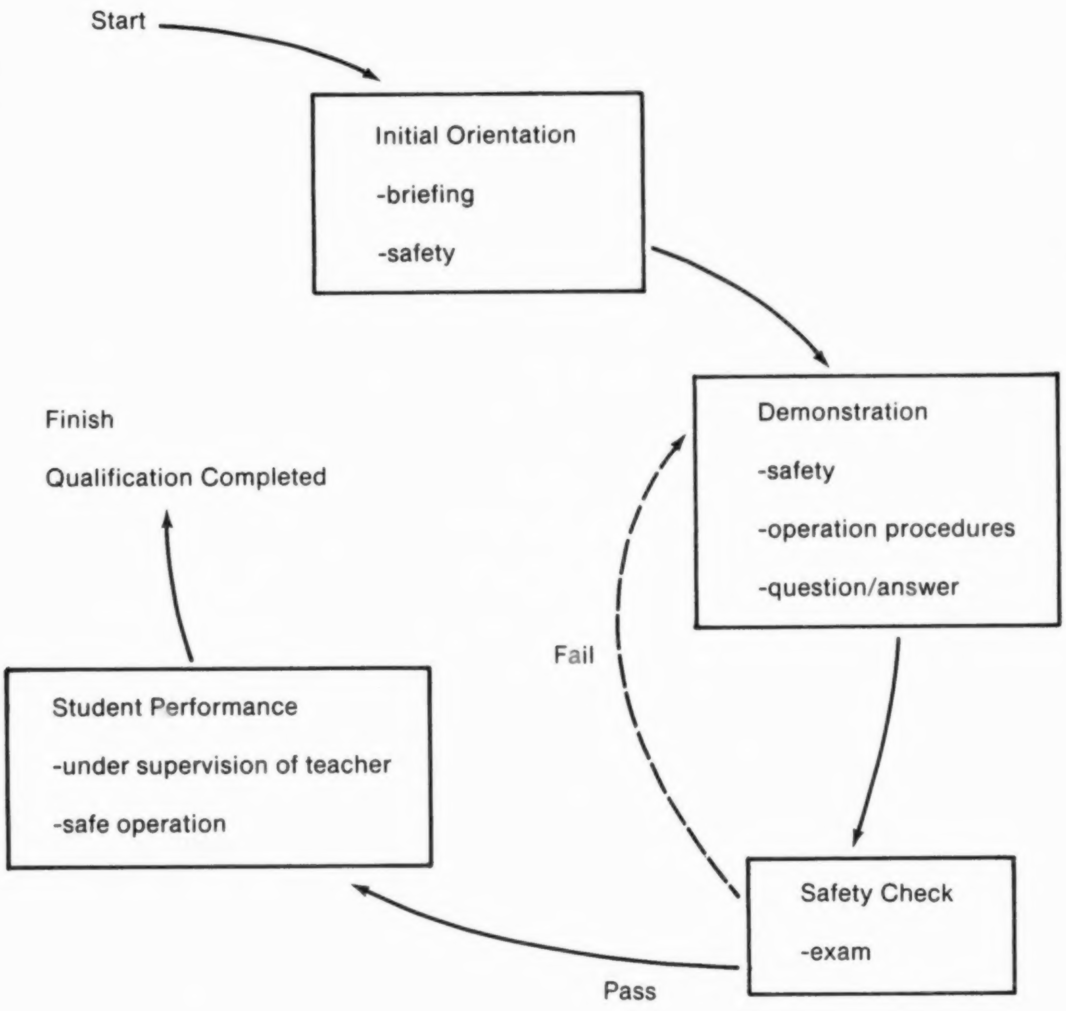
Operation

1. Make checks and adjustments with power off whenever possible.
2. Remove adjusting wrenches or keys.
3. Put guards in proper position.
4. Secure work and maintain proper footing. Have teacher approve special set-ups.
5. Check to see that safety zone is clear.
6. Turn power on. . . Caution!
7. Do not rush or force machine.

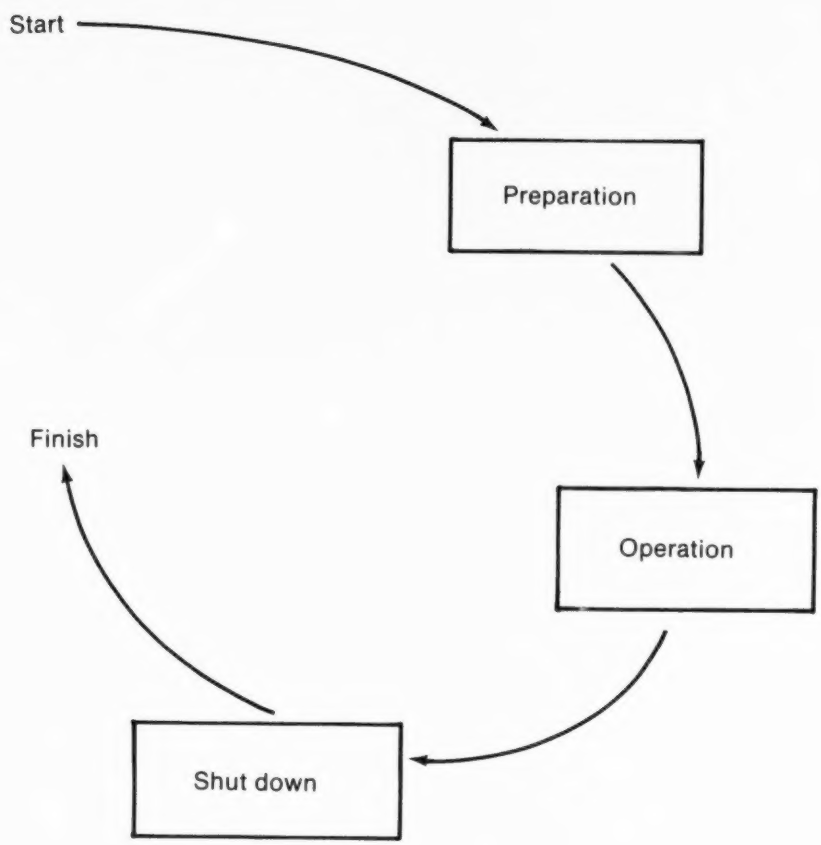
Shut Down

1. Turn power off.
2. Make sure all parts of machine are at dead stop.
3. Remove material from machine.
4. Clean up (disconnect power when cleaning extremely dangerous parts of machine.)

Qualifying on Machines


Start
Initial Orientation
-briefing
-safety
Demonstration
-safety
-operation procedures
-question/answer
Safety Check
-exam
Fail
Pass
Student Performance
-under supervision of teacher
-safe operation
Finish
Qualification Completed

Operation Procedures for Machines


Start
Preparation
Operation
Shut down
Finish

The Facility

Although it is difficult to measure the effects of sound, light, temperature and color variations on students in the shop, the accepted industry standards as they are derived from long-range experimentation and experience must be relied upon. There is no denying that a bright, clean, organized facility is a safe place to work and has a profound effect on student morale.

The National Standard School Shop Safety Inspection Checklist should be used to assess the condition of the shop at the beginning of every school term or semester and reviewed in between for follow-up action. If an unsafe condition cannot be corrected by the teacher, a formal report should be submitted with recommendations to the school principal for action. Include pictures whenever possible to draw immediate attention to the situation.

Safety inspections, however, are not the only course of action for the teacher to follow in providing for a safe facility for his or her students. Long-range plans must be made for improvements which cannot be covered in the school budget. Without a definite plan, only minor improvements can be accomplished. Even minor improvements require some forethought and planning with limited resources.

Safety Inspections

Two types of safety inspections are vital to the safety of personnel in the shop. Daily inspections should be conducted in addition to the preventive maintenance inspection checklist which is included in this section as the National Standard School Shop Safety Inspection Checklist. Safety inspections provide the teacher with a systematic approach in detecting, analyzing and correcting unsafe conditions. Be aware that failure to correct unsafe work methods and conditions could be considered negligence on your part. Conditions change constantly in the shop and the teacher should be able to adjust and perceive an unsafe condition under these circumstances.

Daily Inspections

This type of inspection is usually carried on throughout the activity period by the teacher with the help of his students who should receive this type of training as part of the safety program. If an unsafe work method or condition is detected all related activity should cease at once. Makeshift or temporary corrections are not acceptable under any circumstances. If the temporary correction fails, the same unsafe condition will exist and before it can be detected again, a student might be injured.

Check for these hazards during your daily inspections:

1. Protective gear: Students should be dressed properly for the job at hand. Protective gear should be conveniently located for use.
2. Building conditions: Aisles, driveways and fire exits should be kept clear at all times. Floors should be free from spills and waste.
3. Shop layout: The general plan of the shop should not produce congestion or "bottlenecks" during the work period. Working in crowded quarters is hazardous.
4. Housekeeping: Correct leaks, spills and unsafe waste disposal methods immediately. Brooms, brushes and waste containers should be conveniently located for use.
5. Storage: Tools and materials should be properly stored to facilitate usage. Neatly stored materials help prevent unnecessary rummaging through racks. Combustible materials or liquids should be stored to prevent ignition.
6. Equipment maintenance and guards: Check around points of operation for worn parts or improper adjustments and grounding. Guards and guides should work smoothly without binding.
7. Ventilation: Check mechanical ventilation system as well as natural ventilation. Dust or fumes should be treated as a major hazard in the shop.
8. Electrical: Check for glare and shadow-free lighting conditions. Equipment wiring, switches, motors and grounding should be checked frequently. Use compressed air for

cleaning out motors and switches. Replace worn wiring and defective switches immediately. . . temporary measures are not acceptable. Code compliance required.

9. Fire prevention: Flammable materials should be stored in proper containers and fireproof metal cabinets. Storage area should be clean and free from sources of ignition. All containers should be labeled. Remove all combustible wastes daily without fail. All students shall be familiar with fire drill procedures and the location of all fire extinguishers.

10. First Aid: First aid should be given to all injuries even though they appear to be small. The school nurse has been trained for this purpose and he or she alone should give an injury the required attention or medication.

11. Teaching aids: Select posters and charts carefully for shop use. Change outdated materials. A suggestion box can prove to be useful if its use is encouraged.

Preventive Maintenance Inspection

The National Standard School Shop Safety Inspection Checklist is recommended for use at the beginning of each school semester with frequent reviews to follow up on deficiencies detected during the normal inspection.

Fire Prevention

Although there have been very few minor fires and explosions in this school system due to the precautions taken by teachers and students, it should not be overlooked with a casual attitude. Have you reviewed your fire drill plan and procedures recently? Have you checked your fire extinguishers for proper pressure and working condition? Some of these checks and inspections are easily overlooked if a systematic inspection is not conducted.

Consult with the safety coordinator for help and various resources to provide training in preventing and extinguishing fires. You should also establish emergency fire procedures due to the wide use of combustible materials in the shop.

Safety Check

A periodic check by a qualified fire inspector is helpful in detecting probable causes of fires which may not be obvious to the teacher. Constant surveillance and participation by all personnel help to prevent unsafe conditions. The following items should be checked continuously:

1. Oxygen: Check for open doors, windows or containers at the end of the day. Don't forget to spot check before going out to lunch or recess when the shop is locked but unattended.

2. Fuel: Check all types of gases or finishing products, storage containers, gauges, valves and piping for leaks. Vapors, fumes and dust should be properly exhausted and all combustible wastes removed from the building daily. Clean up oil, gas, kerosene and other volatile liquid spills immediately. Cap-fired tools and explosives are strictly prohibited in schools.

3. Ignition Temperature: Check the following ignition sources. . . matches, arcs from faulty electrical equipment or wiring, open flames from torches, kilns, burners or electrical arc welding, molten metal, furnaces and hot plates which can ignite fuel or materials by contact. Rags with oil or other combustible liquids will ignite spontaneously when the temperature reaches the "flash point" of the liquid. No smoking is allowed in the shop area at any time.

Classification of Fires and Types of Extinguishers

Fires are classified into different types according to the kind of fuel involved and the type of extinguishing agent required to control them.

Class "A": Fires in ordinary combustible materials such as wood, paper, coal or fabrics where cooling or quenching is the usual method of extinguishment. Type of extinguisher required: water or soda acid or foam extinguisher. Some types of dry chemical extinguishers may also be used. . . check the label.

Class "B": Fires in flammable liquids such as gasoline, oil, lacquer, kerosene and solvents, etc. Smothering to cut off the oxygen source is the usual way to extinguish. Do not use water or soda acid for this type of fire which will act as a carrier and spread the fire. Type of extinguisher required: carbon dioxide (CO^2), foam or dry chemical extinguishers.

Class "C": Fires in or near electrical equipment or wiring where a nonconducting type of extinguishing agent is required. Do not use water, soda acid or foam agents for this type of fire . . they can conduct electricity. Carbon dioxide or dry chemical extinguishers have a smothering effect on this type of fire and are considered safe from electrical shock to the user.

Class "D": Fires in combustible metals. Use only special extinguishing agents approved by recognized testing laboratories.

Color Engineering for the School Shop

Although it is difficult to assess the effects of color on the eye and mind of an individual, studies have shown that certain color combinations are better than others. Faber Birren, a notable color expert, has stated that "The eye has different sensitivity under different conditions of illuminations." The color field has a direct relationship to the illumination which in turn affects the acuity of the eye. As we move away from the natural daylight illumination toward the red, blue and violet end of the color spectrum, the eye, according to Feree and Rand, has much difficulty in focusing on objects. Conflicting color combinations can also be a hazard for safe working conditions.

Color engineering in the school shop is important because it provides a continuous visual harmony without distracting the student at work and special markings for items which may be hazardous. While it is not attractive by contemporary decorating standards, the color-engineered shop is a comfortable working environment.

Lighting in the shop should be glare-free and shadow-free in the task area. Supplemental lights should be used if the ceiling lights do not suffice. Ceilings should be white to reflect the upward light found in most modern industrial fixtures.

Equipment and Lab

Equipment and lab safety is usually determined by the individual character of each shop. This section will include general safety rules and possibly hand tool safety "unique" to each area of industrial education. It does not, however, include safety rules found under Safety Practices for all areas. The safety rules in this section are in addition to these practices.

While hand tools can inflict injury to the students, it is the "power" tools and equipment that can cause serious injury and possibly permanent disabilities. The teacher shall inspect the equipment continuously for defects or broken parts which can be hazardous to personnel. If any equipment is unsafe for operation and cannot be repaired immediately, the teacher will shut down the equipment by disconnecting the power, place an "out of order, do not use" sign in a conspicuous place on the equipment and warn students about this hazard. Portable equipment should be properly tagged and locked in a cabinet to prevent further use. Some students tend to ignore obvious defects and will use the equipment if it will run when the power is turned on.

Daily Equipment Checks

The teacher should train his or her students to assist in checking the equipment for defects daily. Although the teacher is fully responsible for the condition of the equipment, students can be very helpful in this respect, while learning about equipment safety. The following items should be checked:

1. *Cleanliness*: The equipment and surrounding work area should be clean and free from waste and spills. Safety zones should be properly marked and non-skid grit sheets provided on floors to prevent slips. Use brush for cleaning. . . do not use hands.

2. *Protective Gear*: All related protective gear should be close at hand for immediate use. A face shield that is stored in a cabinet is inconvenient and the student will not use

it for just a "short job." Check the condition of the protective gear regularly for defects. Use pushsticks whenever possible.

3. *Mounts*: All equipment should be securely mounted. Check mounting bolts for tightness and possible wear. Small blocks used to correct an uneven floor condition are not acceptable. Use the correct metal or rubber shims as recommended by the manufacturer.

4. *Sharpness*: Keep all blades and bits sharp at all times. Lubricate with light coat of oil to prevent rust during long storage. Dull blades are extremely dangerous and it can "bite" unevenly or "kick" the material and cause injury to the user. Worn belts or discs on sanders should be replaced for similar reasons.

5. *Guards*: All guards should be in proper position during use and removed only for cleaning or making adjustments. Moving parts on the guards should be lubricated to work smoothly. Check for worn parts, smashed guards or improper alignment. No drive belt or pulley should be left exposed during the operation of the equipment.

6. *Worn Parts*: Check your equipment for worn, bent or broken parts. Replace worn adjustment keys or wrenches to prevent undue wear on major parts of the machine. Worn or bent shafts on the equipment shall be replaced and teachers shall shut down the equipment until this condition is corrected. Lubricate parts according to the manufacturer's recommendations.

7. *Electrical*: Check equipment wiring, switches, motors and grounding. Most shops require dust-proof switches and devices. Automotive shops and paint spray booths require explosion-proof wiring. Your city electrical inspector can help you in this area. National Electrical Code and local ordinances shall apply to all school shop electrical wiring. Check for electrical "shorts" on motors and wiring including portable power tools.

Qualifications and Operating Procedures

Only qualified personnel should be allowed to operate power machine equipment, without exceptions. Qualifying as a Safe Machine Operator is in an earlier section of this guide. In addition to the qualifying and operating procedures described, instructors are advised to secure forms signed by the students to acknowledge they received safety instruction. This is for your own protection and should not be dismissed without due consideration.

Safety Instructions for Equipment Operation and Related Lab Area

Some of the equipment in this section is used in more than one area of industrial education, but will be listed only once, with a few exceptions. Each set of safety instructions for equipment operation is organized according to:

1. safety instructions
2. safety exam (when available)
3. answers to exam (when available).

National Standard School Shop Safety Inspection Checklist

Prepared by the Joint Safety Committee of the American Vocational Association-National Safety Council

Introduction

A safe environment is an essential part of the school shop safety education program. This safe environment will exist only if hazards are discovered and corrected through regular and frequent inspections by school personnel—administrators, teachers and students. Safety inspections are to determine if everything is satisfactory.

Inspections may be made at the request of the board of education, the school administration or upon the initiative of the teacher. Some communities have drawn upon the cooperative service of professional safety engineers, inspectors of state labor departments, insurance companies and local safety councils to supplement and confirm inspections by school personnel.

The National Standard School Shop Safety Inspection Checklist recommended by the President's Conference on Industrial Safety is an objective inspection procedure for the school shop.

Directions

Who Inspects?

This will depend upon local policies. It is recommended, however, that shop teachers and students—the student safety engineer and/or student safety committee—participate in making regular inspections. This not only tends to share responsibility but stimulates a broader interest in the maintenance of a safe school shop.

When to Inspect?

As a minimum, a safety inspection should be made at the beginning of every school term or semester. More frequent inspections may be advisable.

How to Inspect?

Inspections should be well planned in advance.

Inspections should be systematic and thorough. No location that may contain a hazard should be overlooked.

Inspection reports should be clear and concise, but with sufficient explanation to make each recommendation for improvement understandable.

Follow-up

The current report should be compared with previous records to determine progress. The report should be studied in terms of the accident situation so that special attention can be given to those conditions and locations which are accident producers.

Each unsafe condition should be corrected as soon as possible in accordance with accepted local procedures.

A definite policy should be established in regard to taking materials and equipment out of service because of unsafe conditions.

The inspection report can be used to advantage as the subject for staff and class discussion.

Checking Procedure

Taken from National School Shop Safety Inspection Checklist, National Safety Council, Chicago, Illinois 60611.

Draw a circle around the appropriate letter, using the following letter scheme:

S - Satisfactory (needs no attention)
A - Acceptable (needs some attention)
U - Unsatisfactory (needs immediate attention)

Recommendations should be made in all cases where a "U" is circled.

Space is provided at the end of the form for such comments. Designate the items covered by the recommendations, using the code number applicable (as B-2).

In most categories, space is provided for listing of standards, requirements or regulations which have local application only.

A. General Physical Condition

1. Machines, benches and other equipment are arranged so as to conform to good safety practices.......................................S A U
2. Condition of stairways..........................S A U
3. Condition of aisles ....S A U
4. Condition of floors ....S A U
5. Condition of walls, windows and ceiling ....S A U
6. Illumination is safe, sufficient and well placed ...S A U
7. Ventilation is adequate and proper for conditions ....S A U
8. Temperature control ....S A U
9. Fire extinguishers are of proper type, adequately supplied, properly located and maintained........................S A U
10. Teacher and pupils know location of and how to use proper type for various fires ....S A U
11. Number and location of exits is adequate and properly identified............................S A U
12. Proper procedures have been formulated for emptying the room of pupils and taking adequate precautions in case of emergencies ...S A U
13. Lockers are inspected regularly for cleanliness and fire hazards..............................S A U
14. Locker doors are kept closed ....S A U
15. Walls are clear of objects that might fall.........S A U
16. Utility lines are properly identified ....S A U
17. Teachers know the procedure in the event of fire including notification of the fire department and the evacuation of the building S A U
18. Air in shop is free from excessive dust, smoke, etc..S A U
19. S A U
20. S A U
21. S A U
22. S A U
23. Evaluation for the total rating of A. General Physical Condition ....S A U

B. Housekeeping

1. General appearance as to orderliness...........S A U
2. Adequate and proper storage space for tools and materials ....S A U
3. Benches are kept orderly ....S A U
4. Corners are clean and clear....................S A U
5. Special tool racks, in orderly condition, and provided at benches and machines ....S A U
6. Tool, supply and/or material room is orderly ....S A U
7. Sufficient scrap boxes are provided ....S A U
8. Scrap stock is put in scrap boxes promptly......S A U
9. Materials are stored in an orderly and safe condition ....S A U
10. A spring lid metal container is provided for waste and oily rags. ....S A U
11. All waste materials and oily rags are promptly placed in the containers ....S A U
12. Containers for oily rags and waste materials are frequently and regularly emptied ....S A U
13. Dangerous materials are stored in metal cabinets ....S A U
14. Machines have been color conditioned ....S A U
15. Safety cans are provided for flammable liquids S A U
16. Bulk storage of dangerous materials is provided outside of the main building...........S A U
17. A toe-board or railing around a mezzanine used for storage or washing facilities ....S A U
18. Materials are stored in an orderly and safe condition on this mezzanine ....S A U
19. Flammable liquids are not used for cleaning purposes ....S A U
20. Floors are free of oil, water and foreign material ....S A U
21. Floors, walls, windows and ceilings are cleaned periodically ....S A U
22. S A U
23. S A U
24. S A U
25. S A U
26. Evaluation for the total rating of B. Housekeeping ....S A U

C. Equipment

1. Machines are arranged so that workers are protected from hazards of other machines, passing students, etc. ....S A U
2. Danger zones are properly indicated and guarded ....S A U
3. All gears, moving belts, etc., are protected by permanent enclosure guards...................S A U
4. All guards are used as much as possible ....S A U
5. All equipment control switches are easily available to operator...........................S A U
6. All machines are "locked off" when instructor is out of the room ....S A U
7. Brushes are used for cleaning equipment ....S A U
8. Nonskid areas are provided around machines ...S A U
9. Machines are in safe working condition .... S A U

10. Machines are guarded to comply with American Standards Association and local state code .... S A U
11. Adequate supervision is maintained when students are using machines and dangerous tools .... S A U
12. Tools are kept sharp, clean and in safe working order .... S A U
13. All hoisting devices are in safe operating condition .... S A U
14. Machines are shut off while unattended .... S A U
15. Adequate storage facilities for tools, equipment, etc., not in immediate use .... S A U
16. S A U
17. S A U
18. S A U
19. S A U
20. Evaluation for the total rating of C. Equipment S A U

D. Electrical Installation

1. All switches are enclosed .... S A U
2. There is a master control switch for all of the electrical installations .... S A U
3. Electrical outlets and circuits are properly identified .... S A U
4. All electrical extension cords are in safe condition and are not carrying excessive loads S A U
5. All machine switches are within easy reach of the operators .... S A U
6. Electrical motors and equipment are wired to comply with the National Electric Code .... S A U
7. Individual cut-off switches are provided for each machine .... S A U
8. Machines are provided with overload and underload controls by magnetic pushbutton controls .... S A U
9. No temporary wiring in evidence .... S A U
10. S A U
11. S A U
12. S A U
13. S A U
20. Evaluation for the total rating of D. Electrical Installation .... S A U

E. Gas

1. Gas flow to appliances is regulated, so that when appliance valve is turned on full, the flames are not too high .... S A U
2. Gas appliances are properly insulated with asbestos or other insulating material from tables, benches, adjacent walls or other flammable materials .... S A U
3. No gas hose is used where pipe connections could be made .... S A U
4. Gas appliances have been adjusted so that they may be lighted without undue hazard .... S A U
5. Students have been instructed when lighting gas appliances to light the match first before turning on the gas .... S A U
6. There are no gas leaks, nor is any odor of gas detectable in any part of the shop .... S A U
7. Shop instruction has been given concerning the lighting of gas furnaces operating with both air and gas under pressure .... S A U
8. When lighting the gas forge, goggles are worn .... S A U
9. When lighting the gas furnace, the following procedure is used: (a) light the match; (b) turn on the gas; (c) drop the match in the hole in top of the furnace .... S A U
10. In shutting down the gas furnace, the gas valve is closed before the air valve .... S A U
11. S A U
12. S A U
13. S A U
14. S A U
15. Evaluation for the total rating of E. Gas .... S A U

F. Personal Protection

1. Goggles or protective shields are provided and required for all work where eye hazards exist .... S A U
2. If individual goggles are not provided, hoods and goggles are properly disinfected before use .... S A U
3. Shields and goggles are provided for electric welding .... S A U
4. Rings and other jewelry are removed by pupils when working in the shop .... S A U
5. Proper kind of wearing apparel is worn and worn properly for the job being done .... S A U
6. Leggings, safety shoes, etc., are worn in special classes such as foundry, etc., when needed .... S A U
7. Respirators are provided for dusty or toxic atmospheric conditions such as when spraying in the finishing room .... S A U
8. Questions are made for cleaning and sterilizing respirators .... S A U
9. Students are examined for safety knowledge ability .... S A U
10. Sleeves are rolled above elbows when operating machines .... S A U
11. Clothing of students is free from loose sleeves, flopping ties, loose coats, etc. .... S A U
12. S A U
13. S A U
14. S A U
15. S A U
16. Evaluation for the total rating of F. Personal Protection .... S A U

G. Instruction

1. Shop safety is taught as an integral part of each teaching unit .... S A U
2. Safety rules are posted particularly at each danger station .... S A U
3. Printed safety rules are given each student .... S A U
4. Pupils take a safety pledge .... S A U
5. Use of a safety inspector .... S A U
6. Use of a student shop safety committee .... S A U
7. Use of safety contests .... S A U
8. Motion and/or slide films on safety are used in the instruction .... S A U
9. Use of suggestion box .... S A U
10. Use of safety tests .... S A U
11. Use of safety posters .... S A U

12. Talks on safety are given to the classes by industrial men ....S A U
13. Tours are taken of industrial plants as a means of studying safety practices ....S A U
14. Periodic safety inspections of the shop are made by a student committee ....S A U
15. Men from industry make safety inspections of the shop ....S A U
16. Student shop safety committee investigates all accidents ....S A U
17. A proper record is kept of safety instructions which are given preferably showing the signature of student on tests given in this area ....S A U
18. Rotate students on the shop safety committee so that as many students as possible have an opportunity to participate ....S A U
19. S A U
20. S A U
21. S A U
22. S A U
23. Evaluation for the total rating of G. Instruction S A U

H. Accident Records

1. There is a written statement outlining the proper procedure when and if a student is seriously hurt ....S A U
2. Adequate accident statistics are kept ....S A U
3. Accidents are reported to the proper administrative authority by the instructor ....S A U
4. A copy of each accident report is filed with the State Department of Education ....S A U
5. Accident reports are analyzed for instructional purposes and to furnish the basis for elimination of hazards ....S A U
6. S A U
7. S A U
8. S A U
9. S A U
10. Evaluation for the total rating of H. Accident Records ....S A U

I. First Aid

1. An adequately stocked first aid cabinet is provided.....................................S A U
2. The first aid is administered by a qualified individual....................................S A U
3. The school has individuals qualified to administer first aid ....S A U
4. S A U
5. S A U
6. S A U
7. S A U
8. Evaluation for the total rating of I. First Aid......S A U

Recommendations

Code No.

Architectural Accessibility

Architectural accessibility is another important consideration in accommodating handicapped students in your classroom. Modifying your curriculum and instructional techniques will do little good if a student can't get in the door. Also consider things like whether visually impaired students can read exit or warning signs, and whether steps and floors have non-slip surfaces. These are not only important in making your classroom or lab convenient and accessible for the handicapped, but are often important safety factors, too.

Most school buildings have already been made accessible to the handicapped. However, industrial education labs have seldom been made fully accessible. Use the architectural accessibility checklist provided here as a basis for making your classroom more accessible to special students. It is based on the mandatory provisions of the Iowa State Building Code, Section ISBC 400.0.

Accessibility Checklist

Site Development

1. Is there at least one path with no steps leading from each site access point to the principal entrances? Yes No
2. Is the site graded so that it obtains a level with all primary entrances? Yes No

Walks

1. Are walks used by the general public at least 48" wide? Yes No
    a) Are there places at appropriate intervals for wheelchairs to pass? Yes No
    b) Is all permanent street furniture located along the sides of the walk? Yes No
2. Do gratings in walks have spaces no greater than 1/2" with stable, firm, slip-resistant surfaces and a maximum height of surface changes not exceeding 1/4"? Yes No
3. Do walks other than those located within street right-of-ways have a slope not exceeding 1:20 (5%) and a cross slope not exceeding 1:50 (2%)? Yes No
4. Do walks have a slope not exceeding 1:50 (2%) in front of accessible entrances? Yes No
5. Whenever walks cross other walks, driveways or parking lots, do they blend to a common level? Yes No

Parking and Passenger Loading Zones

1. Are there an appropriate number of parking spaces identified with the international symbol of the physically handicapped? Yes No
2. Is the identification readily visible when the spaces are occupied? Yes No
3. Do the parking spaces have a minimum width of at least 96" with an adjacent 60" wide access aisle? Note: Two accessible parking spaces may share a common aisle. Yes No
4. Do access aisles, passenger loading zones and waiting areas have firm stable surfaces with slopes not exceeding 1:50 (2%)? Yes No
5. Do passenger loading zones provide an unobstructed space at least 48" wide and parallel to the vehicle? Yes No
6. Are parking spaces located so that a parked vehicle overhang does not reduce the clear width of an accessible circulation route? Yes No

Exterior Ramps

1. Do ramps have slopes not exceeding 1:12 (8.33%)? Yes No
2. Do ramps have smooth handrails on both sides? Yes No
    a) Are they 32" in height measured from the surface of the ramp? Yes No
    b) Do they extend one foot beyond the top and bottom of the ramp? Yes No
    c) Does the gripping surface have a diameter or width of 1 1/4" to 1 1/2"? Yes No
    d) If mounted adjacent to a wall is there a space of 1 1/2" between the handrail and the wall? Yes No
    e) Is the inside handrail on switchback or dogleg ramps continuous? Yes No

3. Do ramps have level landings having a minimum dimension of 5′ in the direction of travel at the top and bottom and at intervals not to exceed 30″ rise? Yes No
4. Do ramps have a non-slip surface? Yes No

Curb Ramps

1. Do curb ramps have a slope of 1:12 (8.33%) or less except when prohibited by space limitations? Yes No
   a) Do curb ramps with a slope exceeding 1:12 (8.33%) but not exceeding 1:10 (10%) have a maximum rise of 6″ and a maximum run of 5′? Yes No
   b) Do curb ramps with a slope exceeding 1:10 (10%) but not exceeding 1:8 (12.5%) have a maximum rise of 3″ and a maximum run of 2′? Yes No

Exterior Stairs

1. Do steps avoid abrupt nosings? Yes No
2. Do stairs have smooth handrails on both sides? Yes No
   a) Are they 30″ to 34″ in height measured from the tread at the face of the riser? Yes No
   b) Does at least one handrail extend 12″ beyond the top step and 12″ plus the width of one tread beyond the bottom step? Yes No
   c) Are the handrails returned, or terminated in newel posts or safety terminals? Yes No
   d) Does the gripping surface have a diameter or width of 1 1/4″ to 1 1/2″? Yes No
   e) If mounted adjacent to a wall is there a space of 1 1/2″ between the handrail and the wall? Yes No
   f) Is the inside handrail on switchback or dogleg stairs continuous? Yes No

Building Requirements

Interior Ramps

1. Do ramps have slopes not exceeding 1:12 (8.33%)? Yes No
2. Do ramps have smooth handrails on both sides? Yes No
   a) Are they 32″ in height measured from the surface of the ramp? Yes No
   b) Do they extend one foot beyond the top and bottom of the ramp? Yes No
   c) Does the gripping surface have a diameter or width of 1 1/4″ to 1 1/2″? Yes No
   d) If mounted adjacent to a wall is there a space of 1 1/2″ between the handrail and the wall? Yes No
   e) Is the inside handrail on switchback or dogleg ramps continuous? Yes No
3. Do ramps have level landings with a minimum dimension of 5′ in the direction of travel at the top and bottom and at intervals not to exceed 30″ rise? Yes No
4. Do ramps have a non-slip surface? Yes No

Entrances

1. Are all primary entrances usable by persons in wheelchairs? Yes No
2. Are the primary entrances on a level that makes the elevators, if any, accessible? Yes No

Accessibility within the Facility

1. Is accessibility to floors other than those at grade level, when required, made by means of a ramp or elevator located within the building? Yes No

Doors and Doorways

1. Do doors have a clear opening of no less than 32″ when open 90 degrees? Yes No
2. Are they operable by a single effort? Note: Two-leaf doors are not usable by those with disabilities unless both leaves operate by a single effort or unless one of the two leaves meets the 32″ clear opening width. Yes No
3. Is the maximum force for pushing or pulling open an exterior hinged door not greater than 8.5 pounds and the maximum force for opening sliding, folding or interior hinged doors not greater than 5.0 pounds? Note: These forces do not apply to the force required to operate the latch. Fire doors shall have the minimum force allowed by the local or state building code. Yes No

4. Is the threshold height not greater than 3/4" for exterior sliding doors and 1/2" for all other types of doors? Yes No
5. When two hinged or pivoted doors are in series is there a minimum of 48" plus the width of any door swinging into the space between the doors? Yes No
6. Is the floor on the inside and outside of each doorway level for a distance of 5' from the door in the direction the door swings and does it extend 1' beyond each side of the door? Note: Exterior platforms may have a maximum slope at 1:50 to allow drainage. Yes No

Interior Stairs

1. Do steps avoid abrupt nosings? Yes No
2. Do stairs have smooth handrails on both sides? Yes No
    - a) Are they 30" to 34" in height measured from the tread at the face of the riser? Yes No
    - b) Does at least one handrail extend 12" beyond the top step and 12" plus the width of one tread beyond the bottom step? Yes No
    - c) Are the handrails returned, or terminated in newel posts or safety terminals? Yes No
    - d) Does the gripping surface have a diameter or width of 1 1/4" to 1 1/2"? Yes No
    - e) If mounted adjacent to a wall is there a space of 1 1/2" between the handrail and the wall? Yes No
    - f) Is the inside handrail on switchback or dogleg stairs continuous? Yes No

Floors

1. Is the floor surface non-slip whenever practicable? Yes No
2. Are floors on the same story on a common level throughout or connected by ramps? Yes No

Elevators

1. When provided are elevators available to and usable by the physically handicapped at all levels used by the general public? Yes No
2. Do controls have identifying features for the benefit of the blind? Yes No

Public Restrooms

1. Is there an appropriate number of toilet rooms for each sex that are accessible to and usable by the physically handicapped? Yes No
2. Do toilet rooms have sufficient space to allow wheelchair traffic? Yes No
3. Is there a clear unobstructed access not less than 32" width and a 32" x 32" clear floor space in front of the water closet unobstructed by door swing, grab bars or similar items? Yes No
4. Are there a minimum of two grab bars provided for each handicapped water closet? Yes No
    - a) Are grab bars mounted within easy reach at the side and back or on each side? Yes No
    - b) Are the grab bars for the sides a minimum of 40" long and mounted not more than 12" from the rear wall? Yes No
    - c) Is the grab bar for the rear wall a minimum of 36" long? Yes No
    - d) Are they mounted at a usable height, approximately 33" above the floor? Yes No
    - e) Does the gripping surface have a diameter or width of 1 1/4" to 1 1/2"? Yes No
    - f) If mounted adjacent to a wall is there a space of 1 1/2" between the grab bar and the wall? Yes No
5. Do lavatories provide, except for the projection of the bowls and waste piping, a clear unobstructed space at least 30" in width, 29" in height above the floor with toe clearance having a minimum height of 9" and a minimum depth of 17"? Yes No
6. Are urinals stall type or wall-hung with an elongated rim at a maximum of 17" above the floor? Yes No
7. Are an appropriate number of mirrors, towel and disposal fixtures and other dispensers installed so that the operating portion of the fixtures and the bottom of the mirror are within 40" of the floor? Note: tilt mirrors providing an equivalent field of view may be used when the bottom of the mirror is within 44" of the floor. Yes No

Water Fountains

1. When provided, do an appropriate number of drinking fountains have a spout within 36" of the floor and upfront hand-operated controls? Yes No
    - a) When located in an alcove does the alcove have a minimum clear width of 32"? Yes No

Public Telephone

1. Are there an appropriate number of public telephones accessible to physically handicapped persons? Yes No
2. Is unobstructed access provided to within 12" of the phone with a clear floor area having not less than 32" width and depth? Yes No
3. Is height of dial from floor 54" or less? Yes No
4. Is coin slot located 54" or less from the floor? Yes No
5.
    - a) Are there telephones equipped for persons with hearing disabilities? Yes No
    - b) Are these telephones identified as such? Yes No

Identification

1. Are doors not intended for normal use, that might prove dangerous if a blind person were to exit or enter by them, made quickly identifiable to the touch? Yes No
2. Does all sign identification that provides emergency information, general circulation directions or room or space identification:
    - a) have letters and numbers having a width to height ratio between 3.5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10? Yes No
    - b) have light characters on a dark background or dark characters on a light background? Yes No
    - c) have sans serif letter and numbers on signs raised or incised a minimum of 1/32"? Yes No
    - d) have raised characters with a height between 5/8" and 2" or indented characters with a stroke width at least 1/4"? Yes No
    - e) have symbols or pictographs on signs raised or incised a minimum of 1/32"? Yes No
3. When facilities are identified as accessible is the international symbol of accessibility used? Yes No

Warning Signals

1. Are audible warning signals accompanied by simultaneous visual signals and visual warning signals accompanied by simultaneous audible signals? Yes No

Controls and Operating Mechanisms

1. Are all controls and operating mechanisms that are in accessible spaces, along accessible routes or part of accessible elements usable by the physically handicapped? Yes No
    - a) Are they located so that there is sufficient clear floor area to allow an individual in a wheelchair to make a forward or parallel approach? Yes No
    - b) Are they within 48" of the floor for forward reach, between 9" and 54" from the floor for side reach and between 9" and 46" from the floor for a side reach over an obstruction? Yes No
    - c) Is the maximum force required to activate a control no greater than 5 pounds? Yes No

Seating Areas

1. Is the number of seating spaces for wheelchair users at least 2% of capacity or a minimum of 4? Yes No
2. Are seating spaces reasonably distributed throughout the area? Yes No
3. Is access to seating spaces in compliance with the requirements? Yes No

Vending Machines

1. Are vending machines available which have push-button type controls? Yes No
2. Are the coin slots no higher than 4'8" off the floor? Yes No

Cafeterias

1. Do cafeterias have doors at least 34" wide? Yes No
2. Do cafeterias have service lanes at least 36" wide? Yes No
3. Do cafeterias have tray slides mounted 34" off the floor? Yes No
4. Are cafeteria tables mounted at least 6' apart? Yes No
5. Do cafeteria tables provide at least 27 1/2" of knee space as measured from the floor? Yes No

Hazards

1. Are there low-hanging objects such as door closers, ceiling light fixtures and low-hanging signs that protrude into corridors, doorways and traffic lanes? Yes No
2. Are areas under construction barricaded to prevent entry? Yes No
3. Are emergency exit routes and procedures advertised? Yes No

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